FIG 1

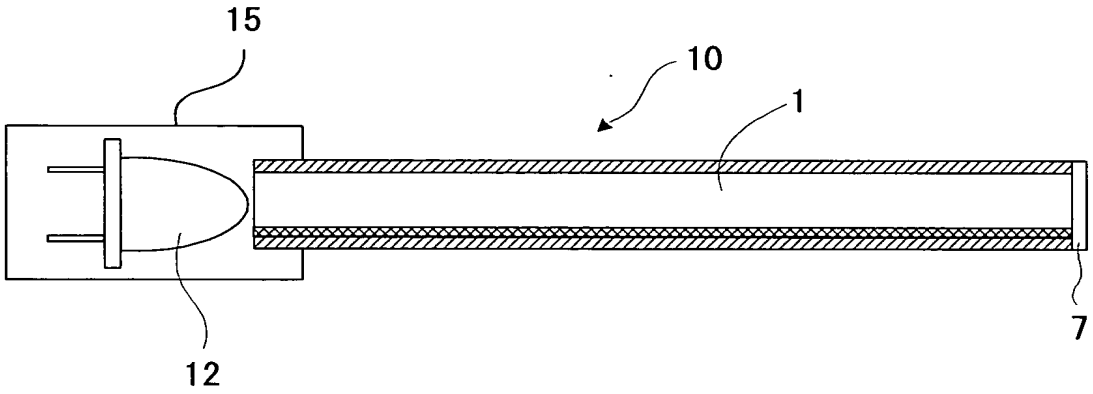


FIG 2

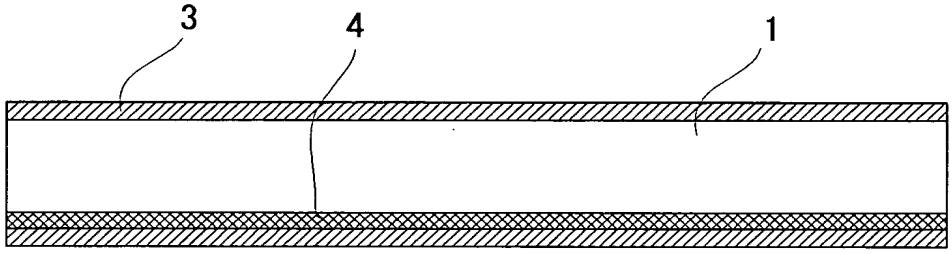


FIG 3

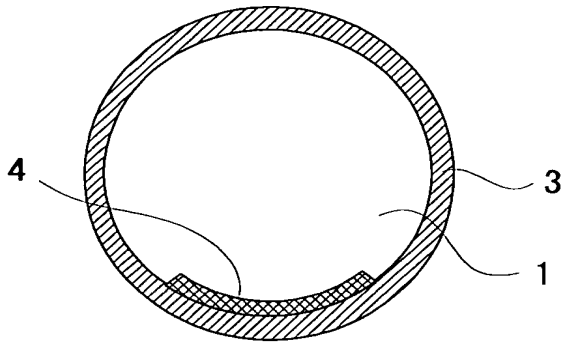


FIG 4

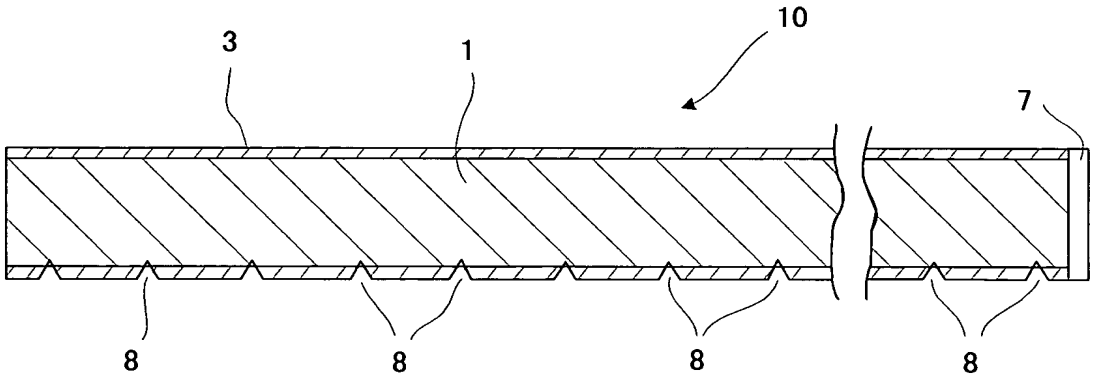


FIG. 5A

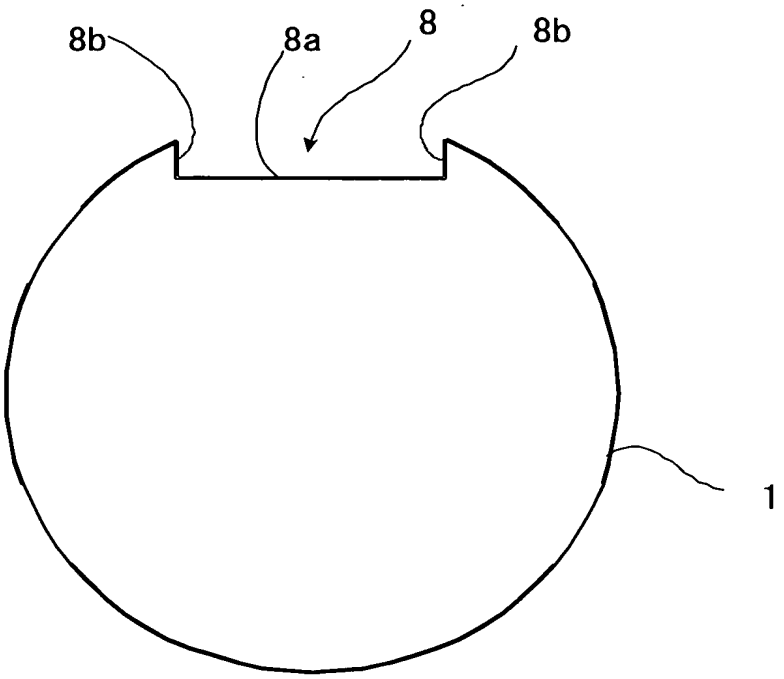


FIG. 5B

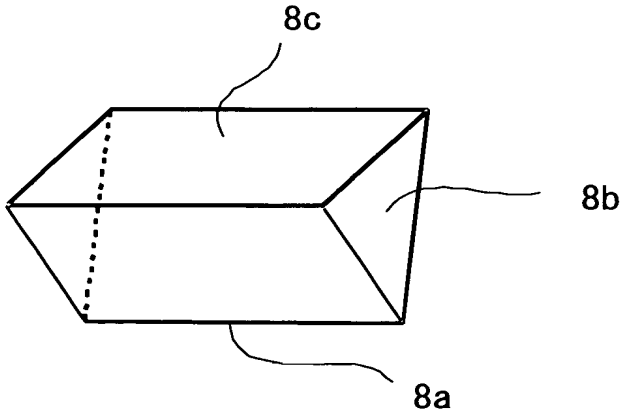


FIG. 6A

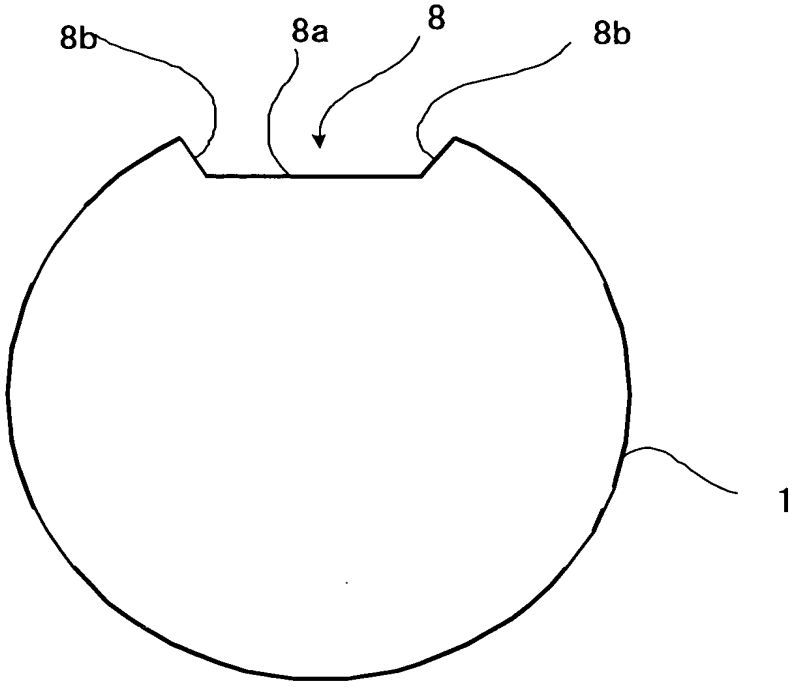


FIG. 6B

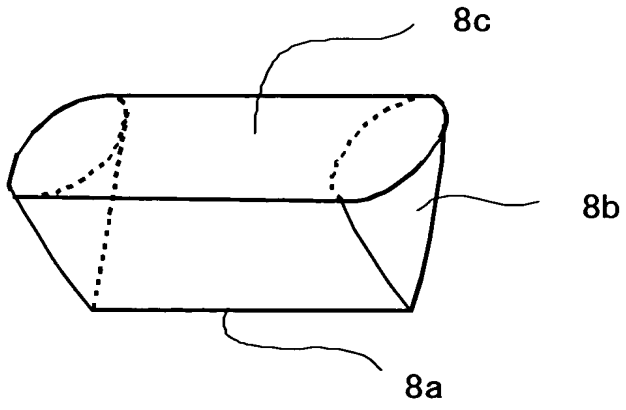


FIG. 7

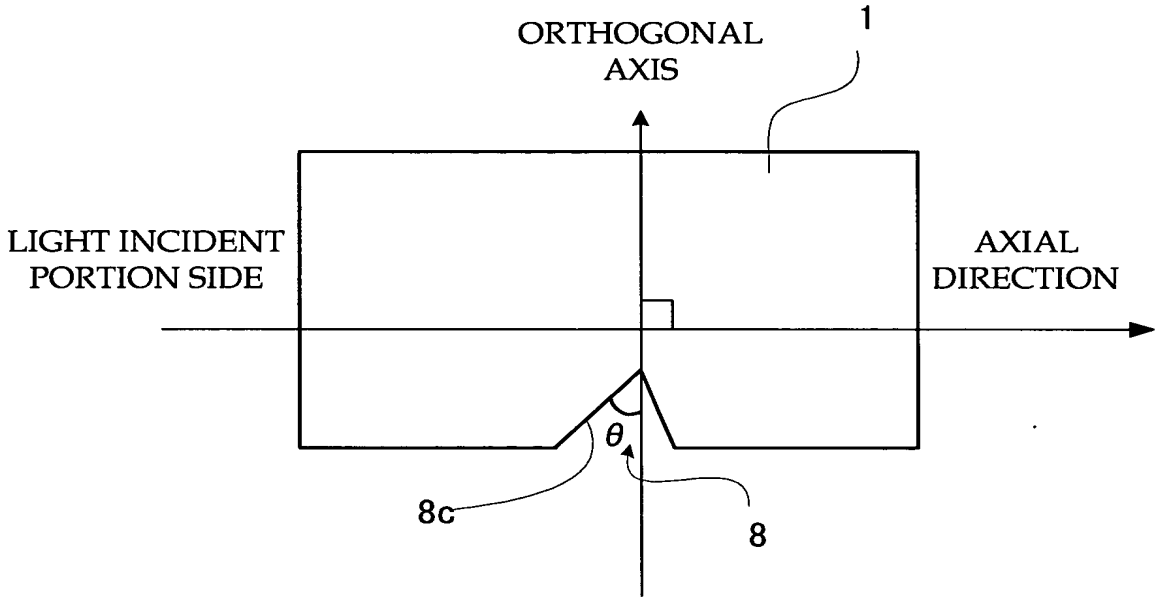


FIG. 8A

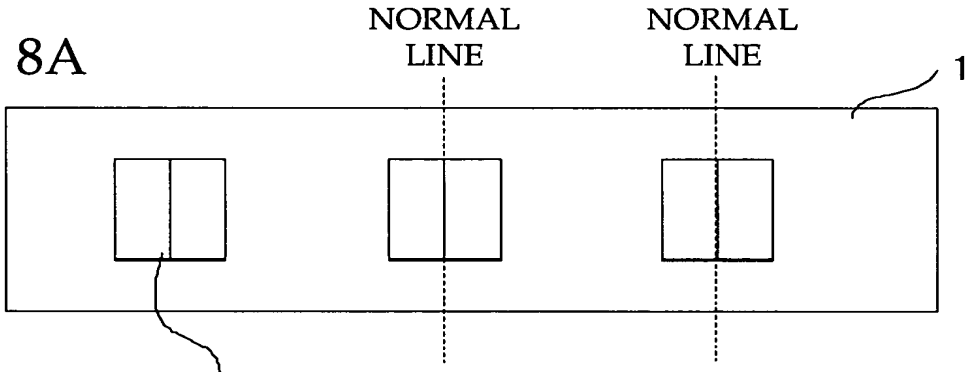


FIG. 8B

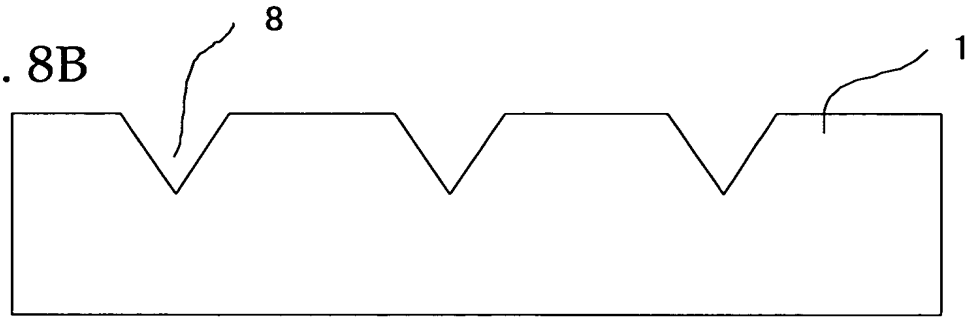


FIG. 9A

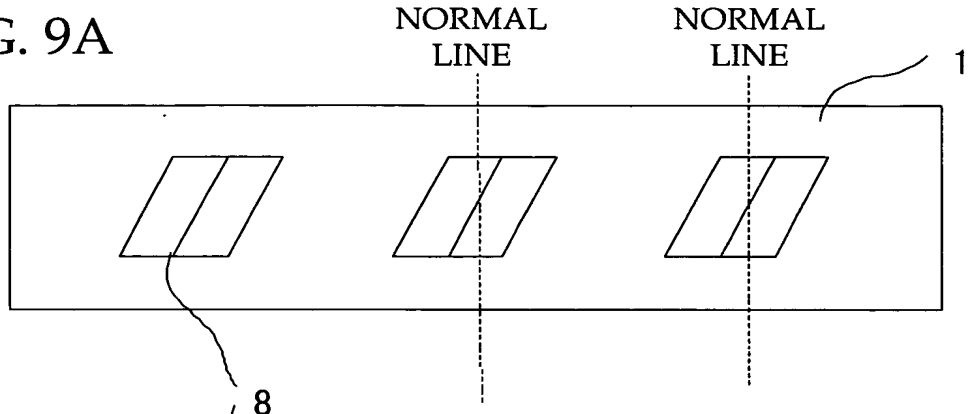


FIG. 9B

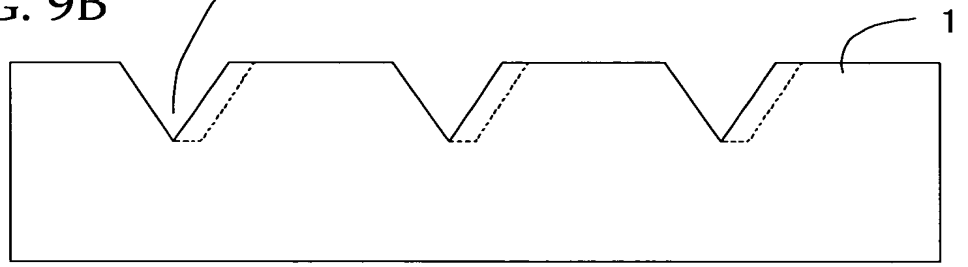


FIG. 10

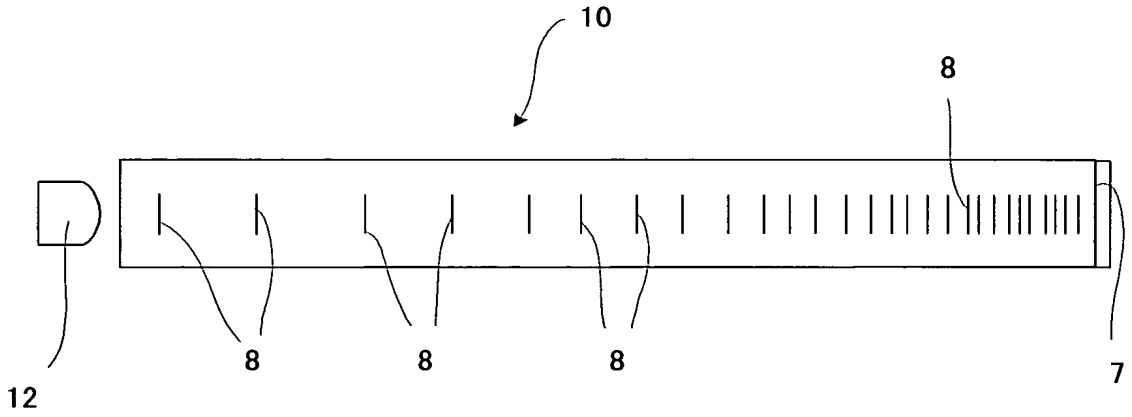


FIG. 11

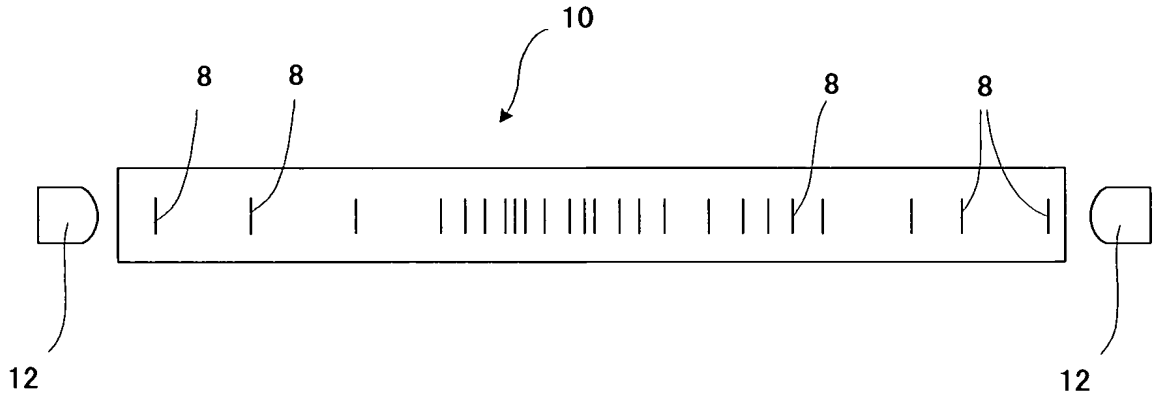


FIG. 12A

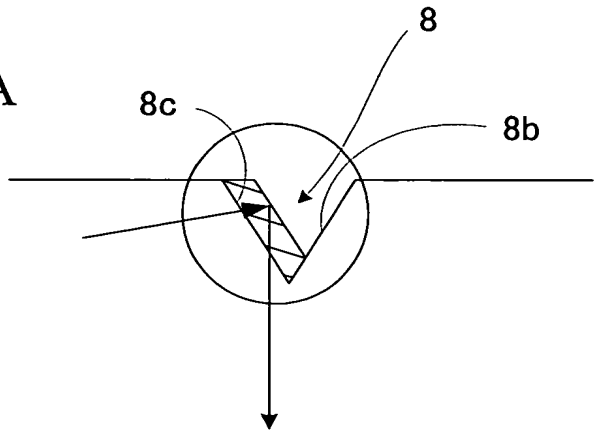


FIG. 12B

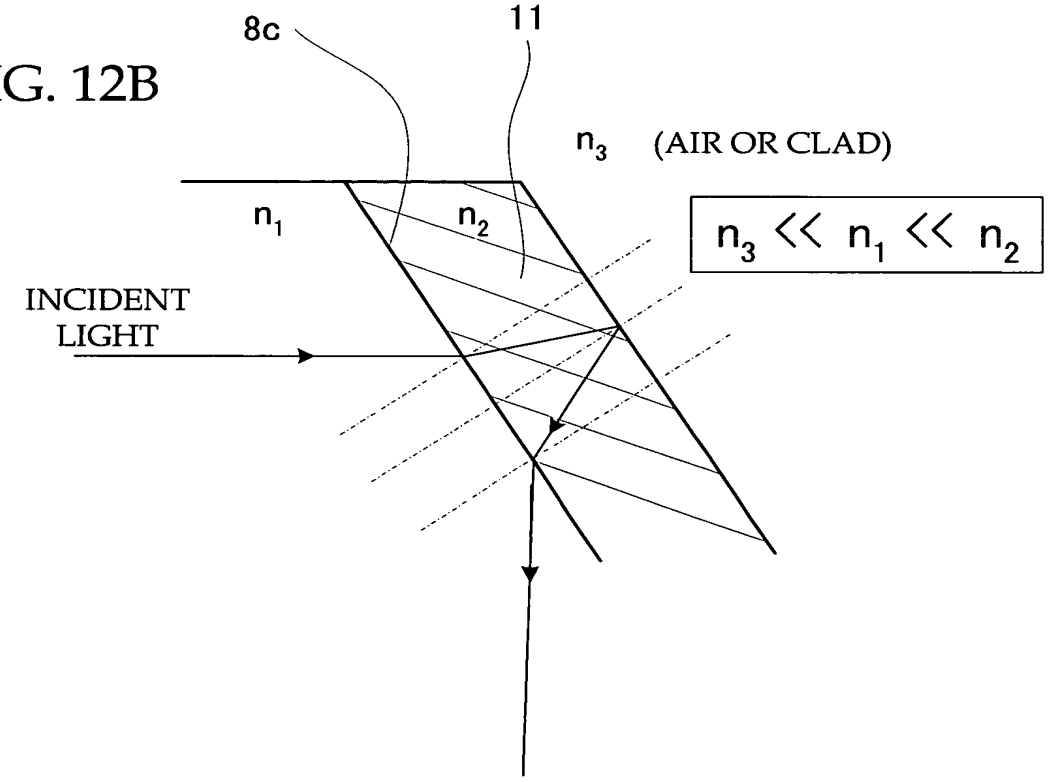


FIG. 13A

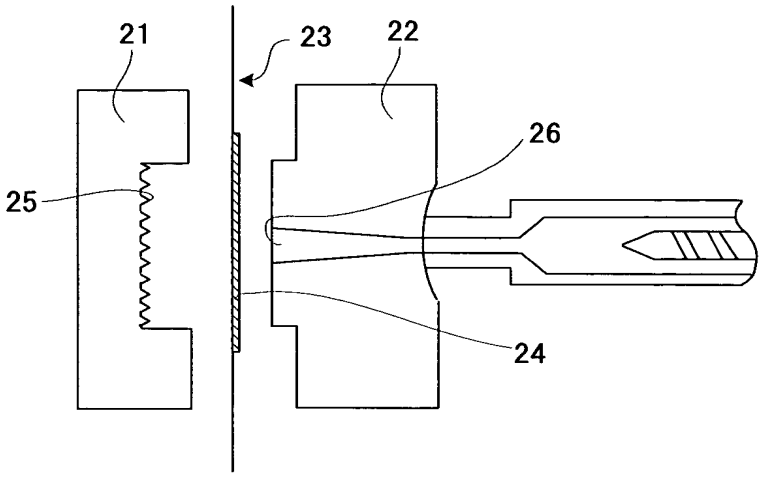


FIG. 13B

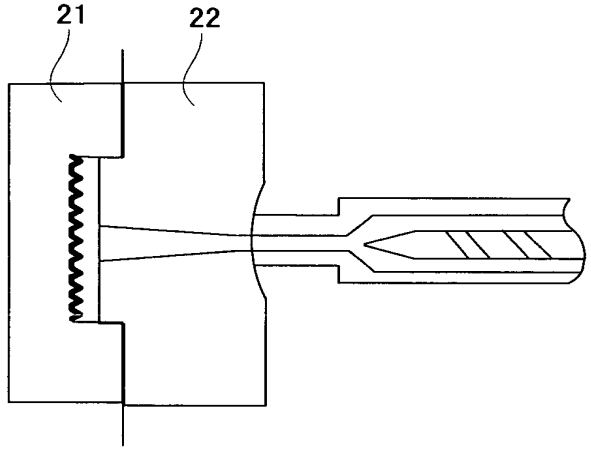


FIG. 13C

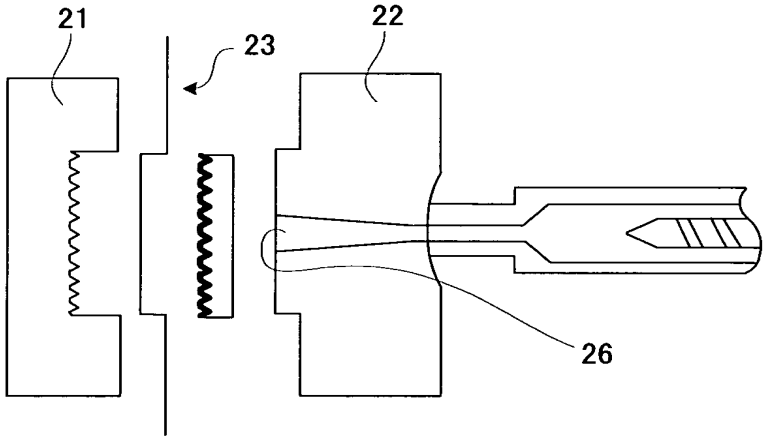


FIG. 14

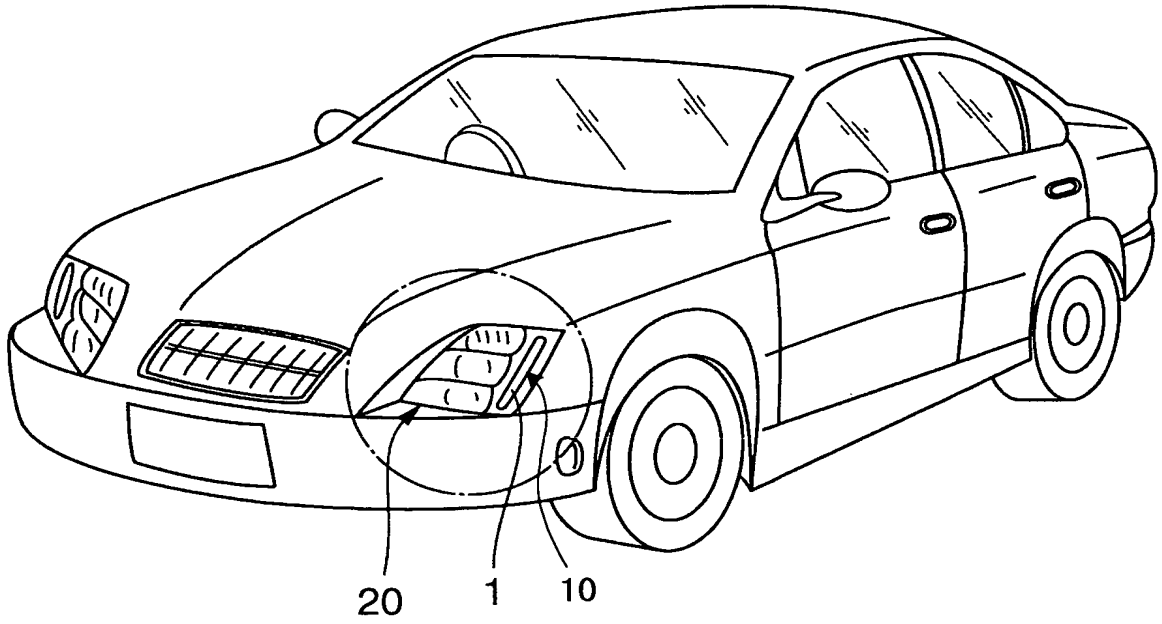


FIG. 15

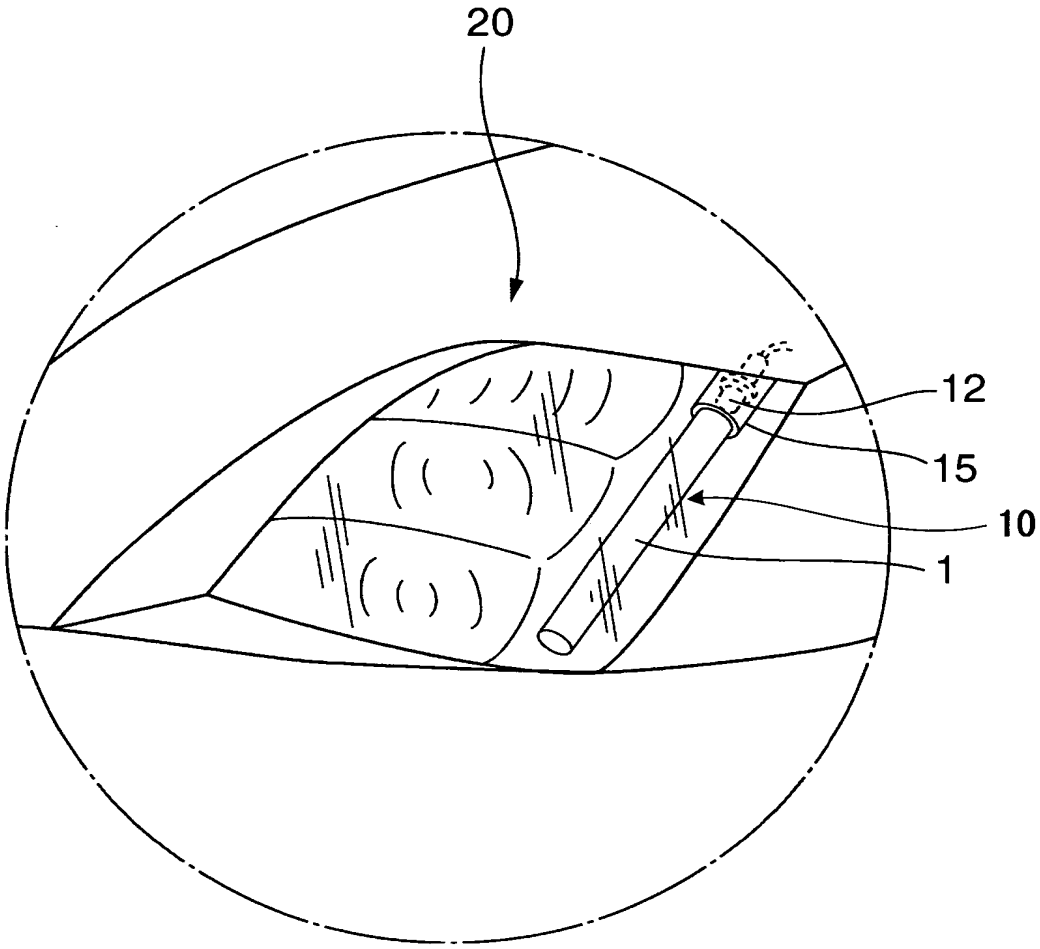


FIG. 16

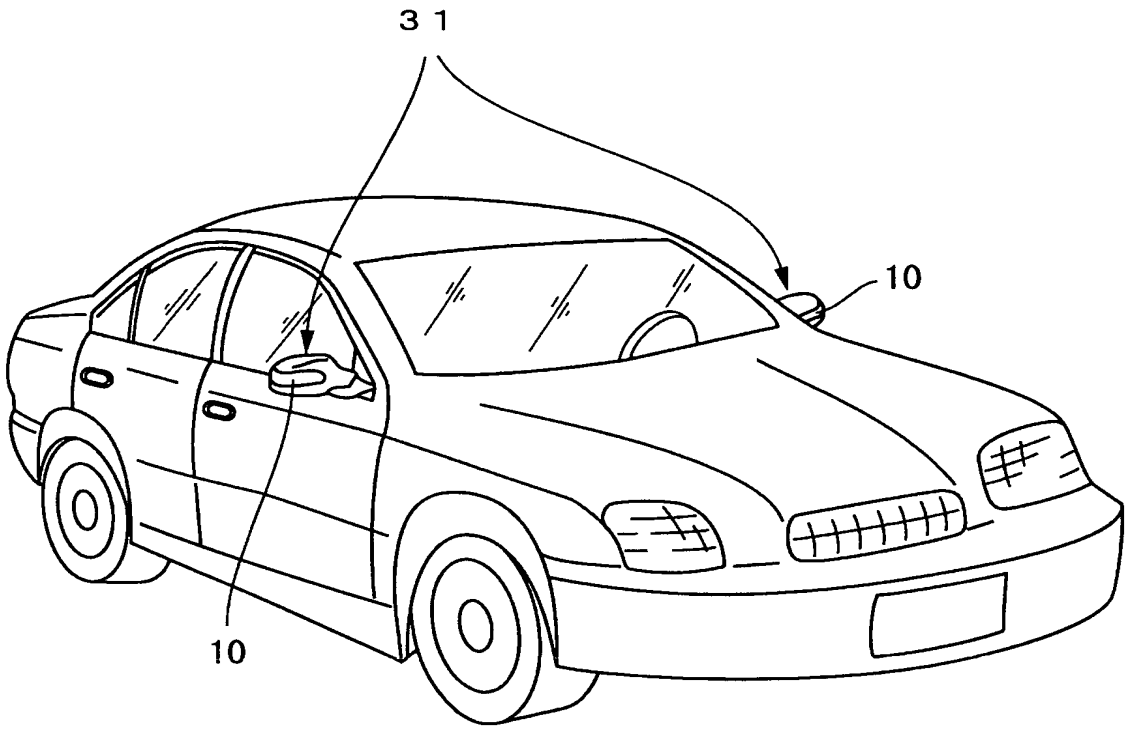


FIG. 17

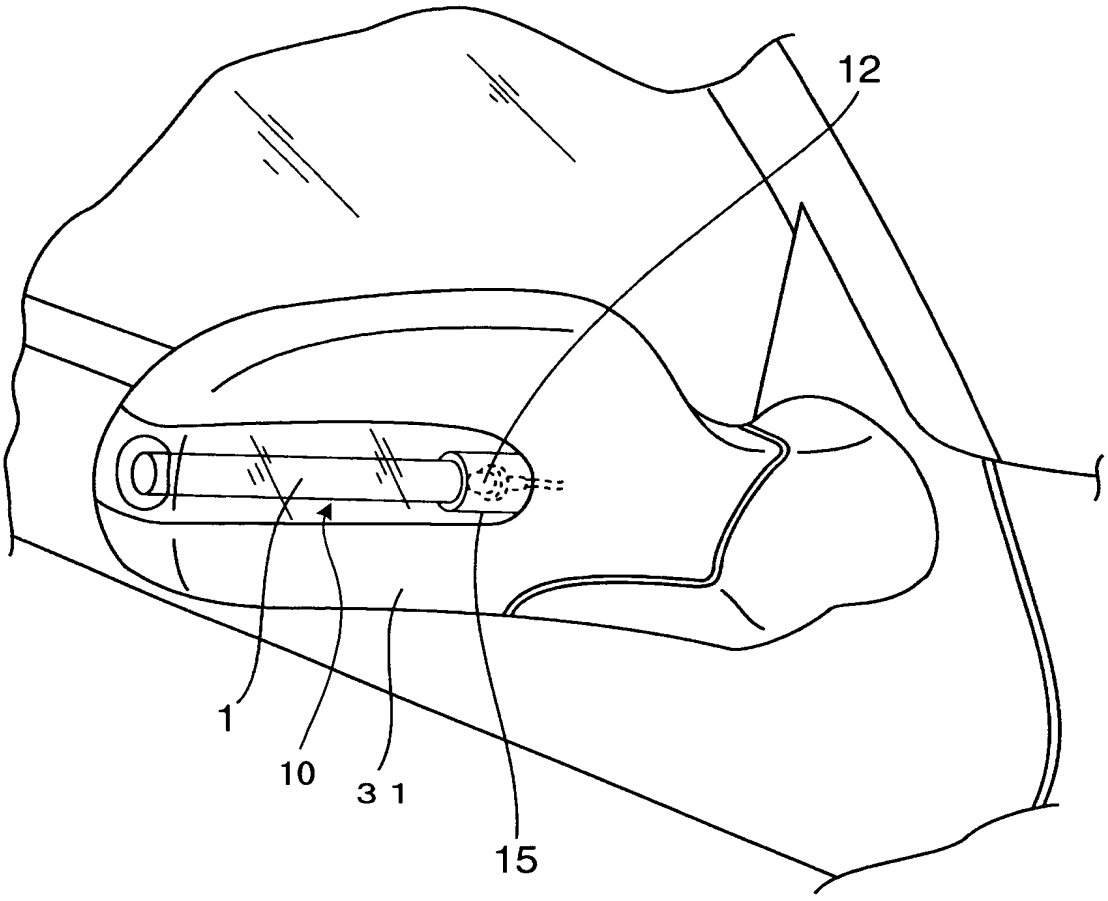


FIG. 18

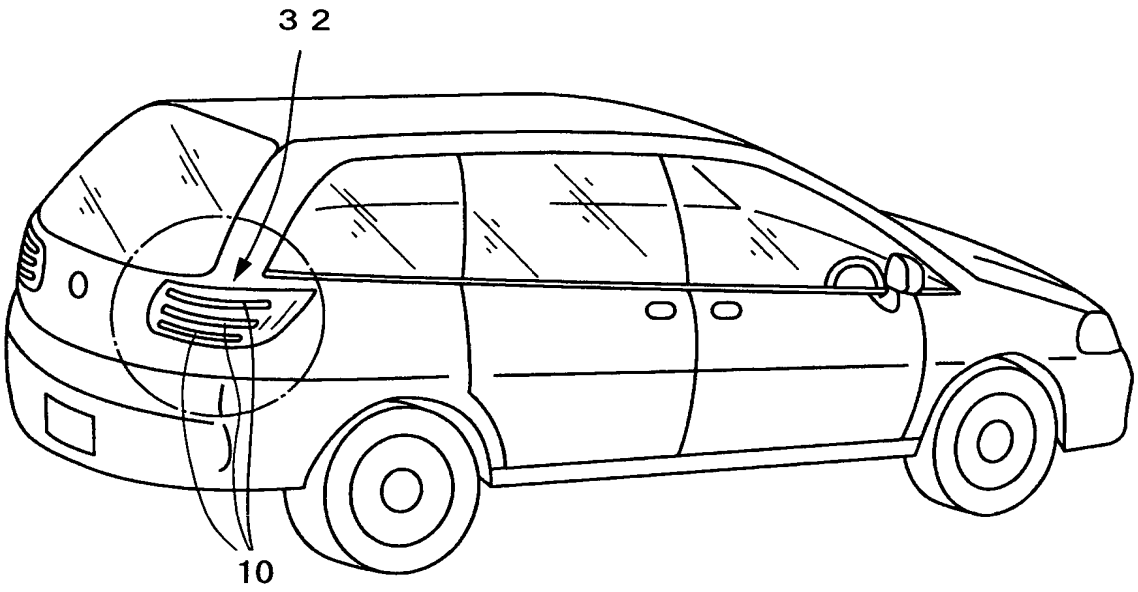


FIG. 19

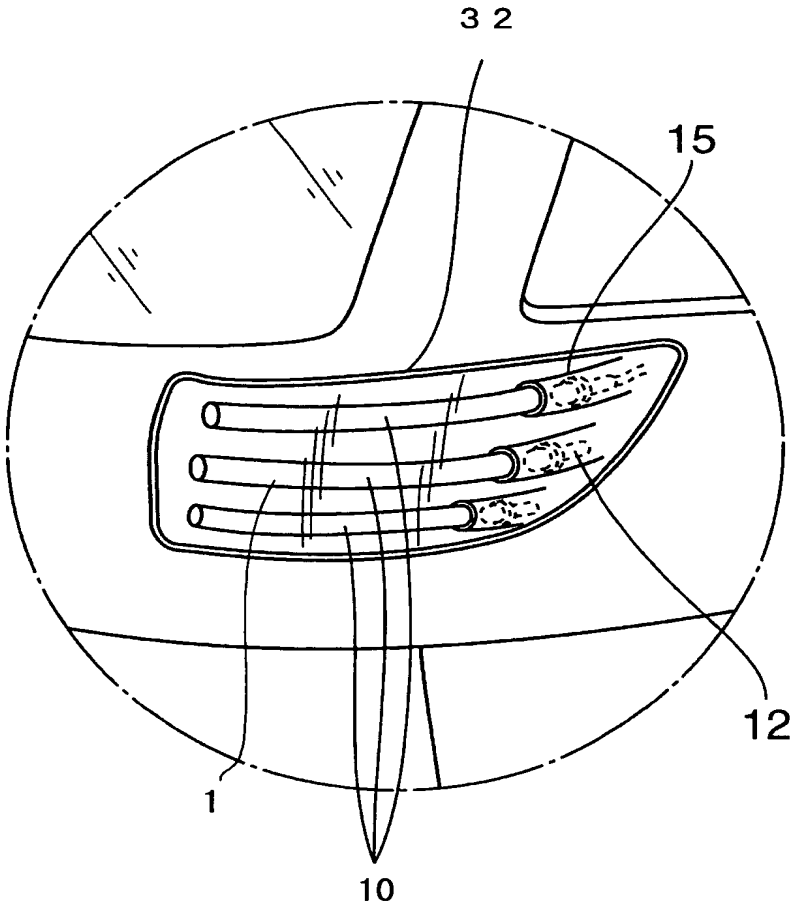


FIG. 20

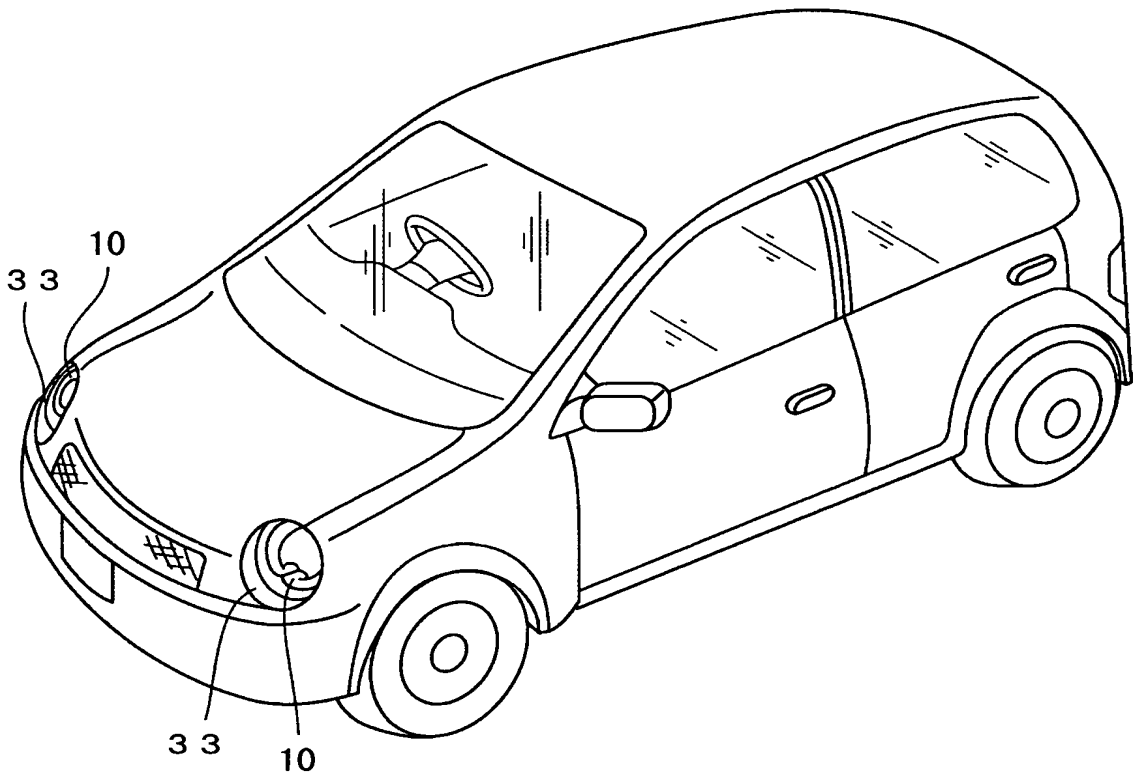


FIG. 21A

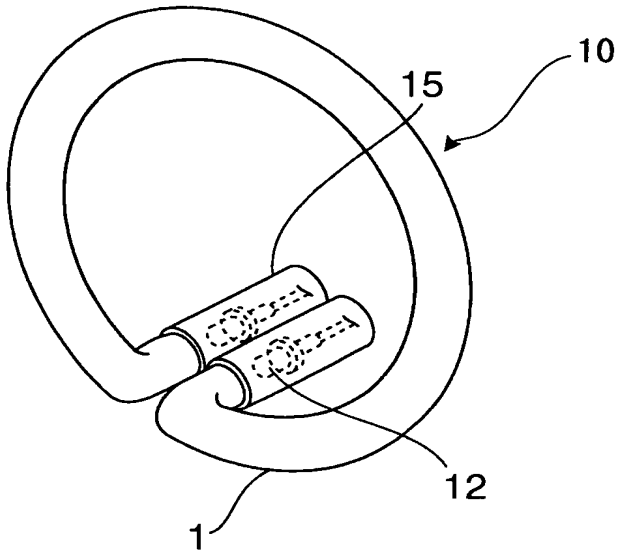


FIG. 21B

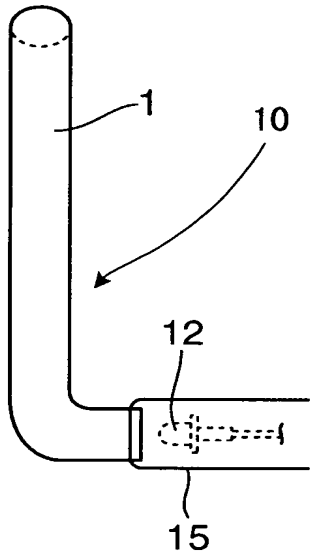


FIG. 22A

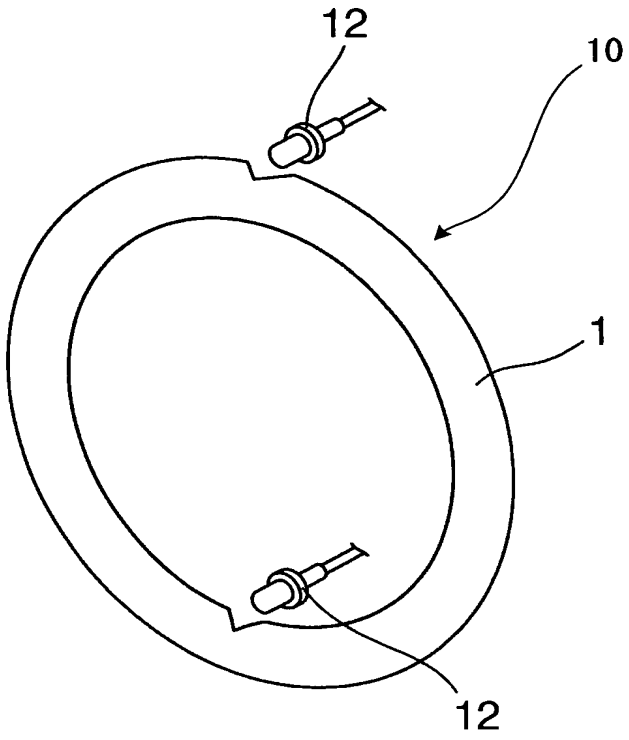


FIG. 22B

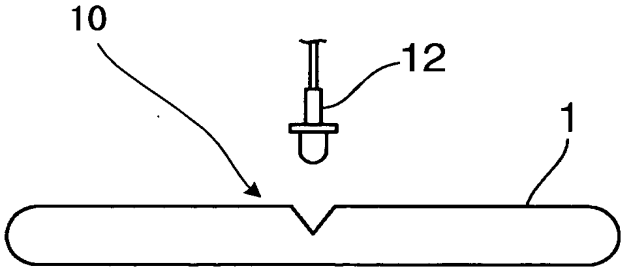


FIG. 23

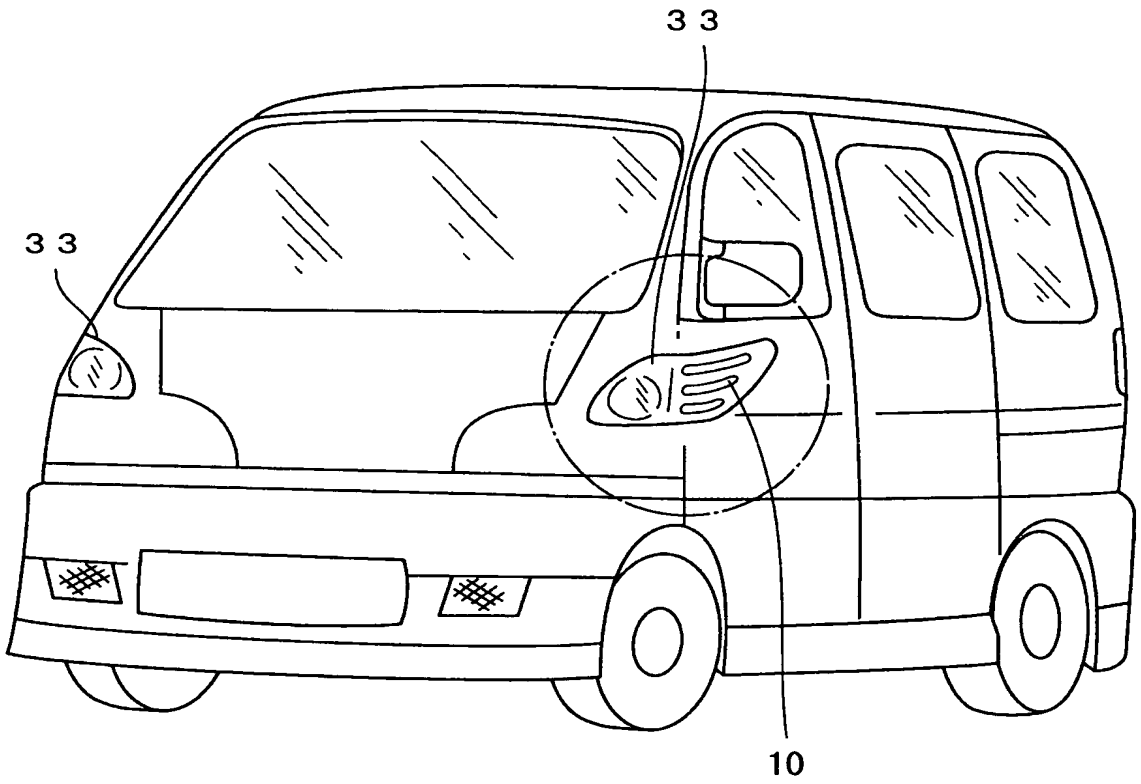


FIG. 24

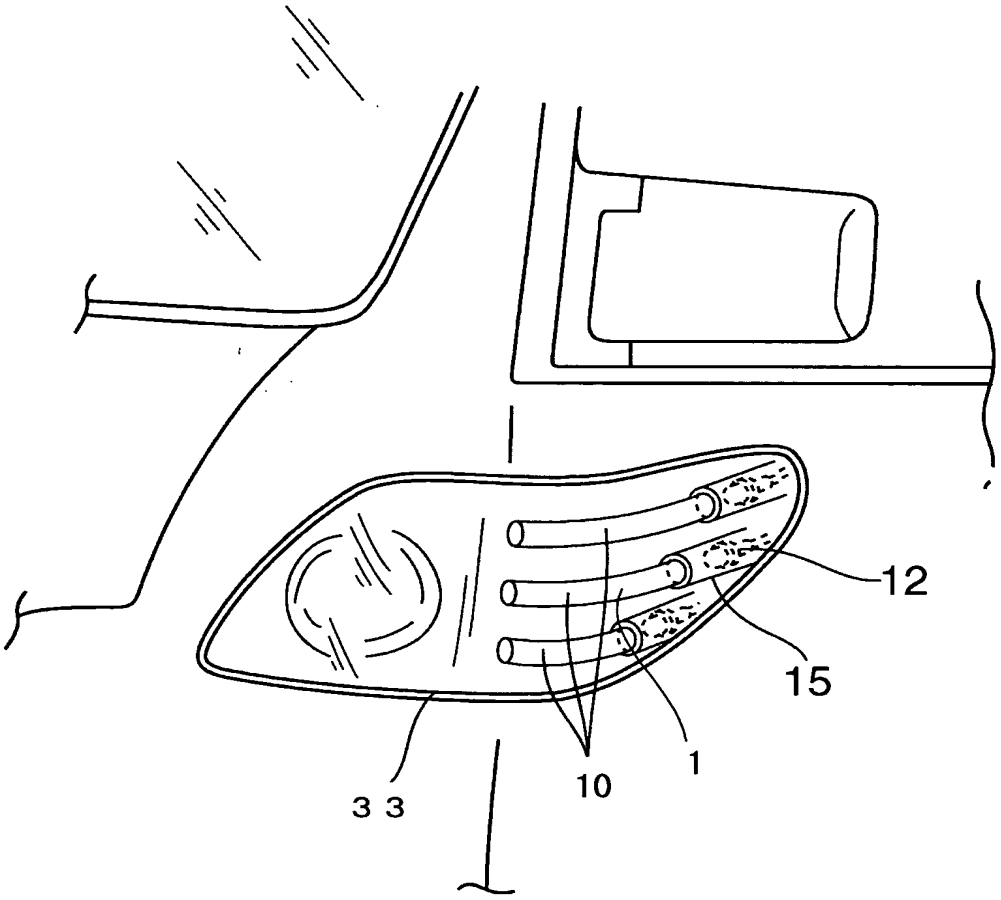


FIG. 25

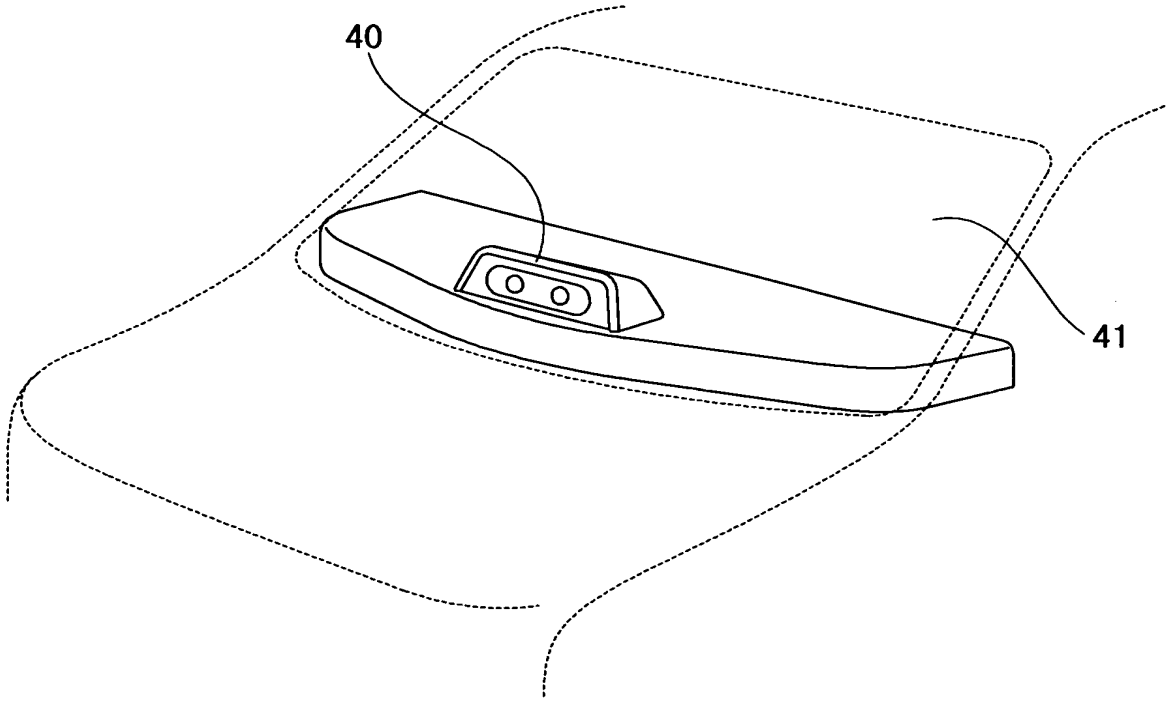


FIG. 26

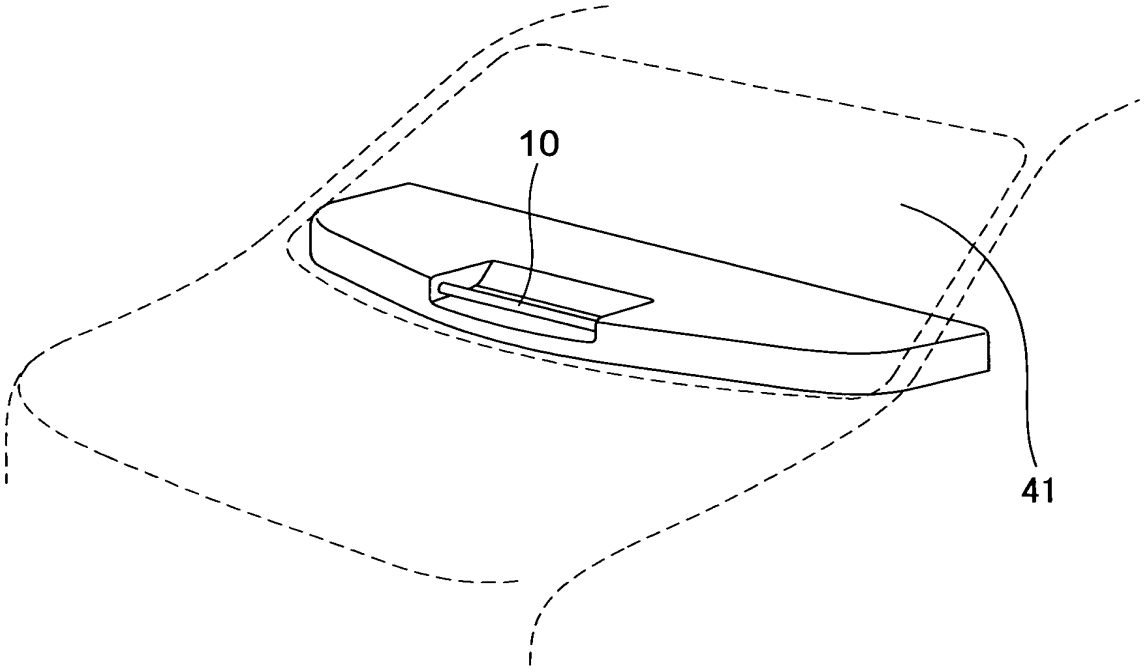


FIG. 27

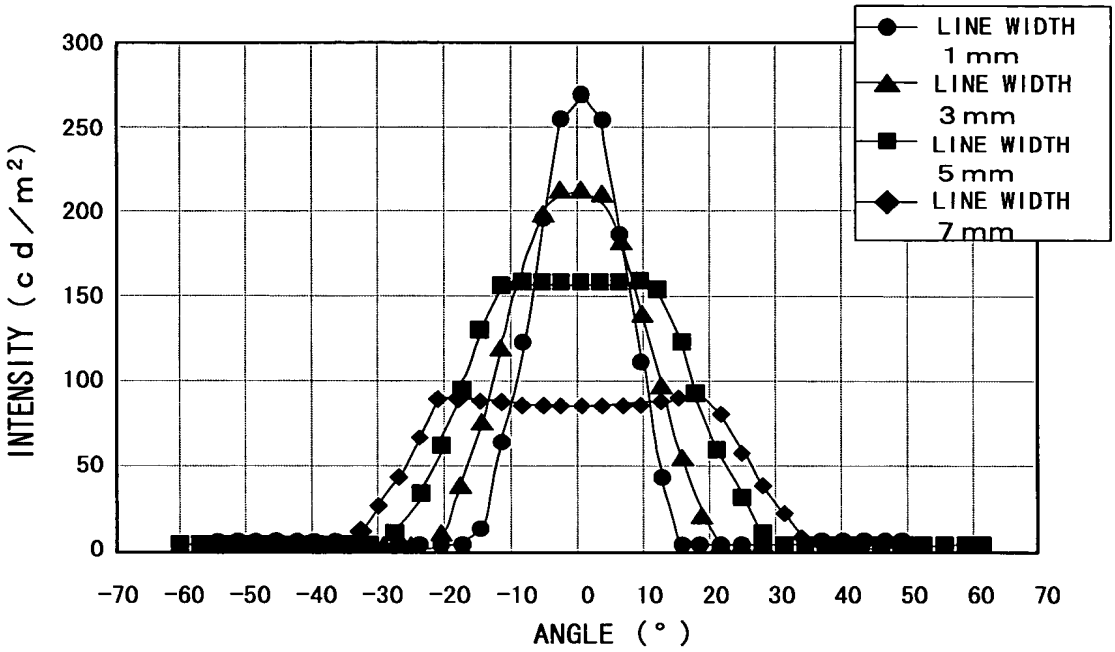

LINE WIDTH 1 mm
LINE WIDTH 3 mm
LINE WIDTH 5 mm
LINE WIDTH 7 mm
INTENSITY (cd/m²)
300
250
200
150
100
50
0
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70
ANGLE (°)

FIG. 28

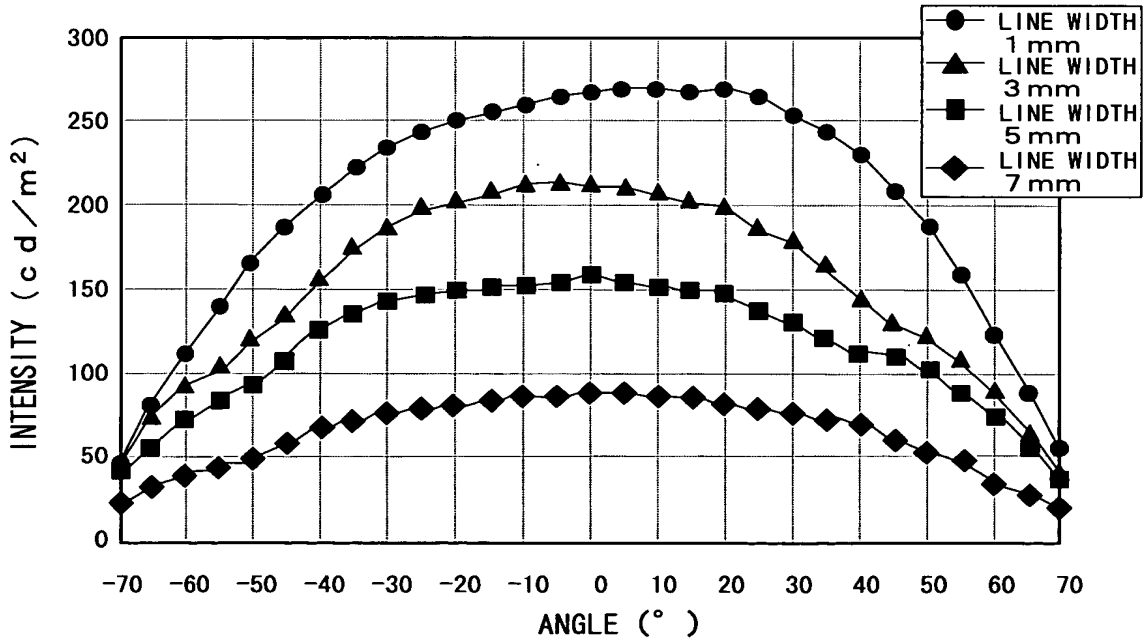

LINE WIDTH 1 mm
LINE WIDTH 3 mm
LINE WIDTH 5 mm
LINE WIDTH 7 mm
INTENSITY (cd/m²)
300
250
200
150
100
50
0
-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70
ANGLE (°)

FIG. 29

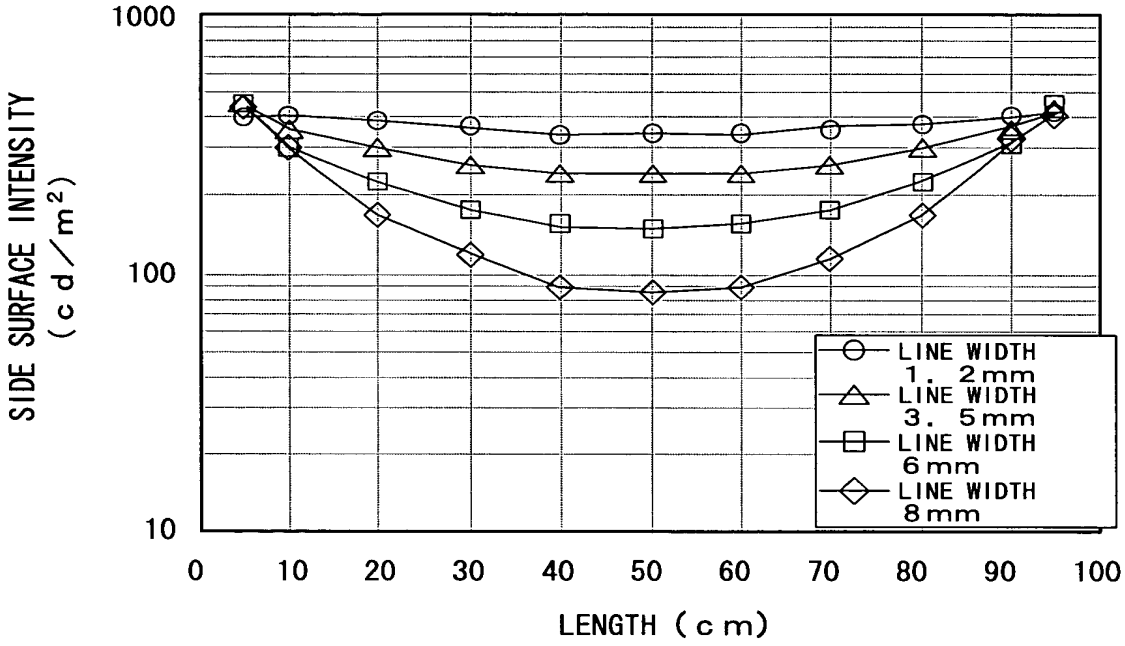

1000
100
10
SIDE SURFACE INTENSITY
(cd/m²)
0
10
20
30
40
50
60
70
80
90
100
LENGTH (cm)
LINE WIDTH 1.2mm
LINE WIDTH 3.5mm
LINE WIDTH 6mm
LINE WIDTH 8mm

FIG. 30

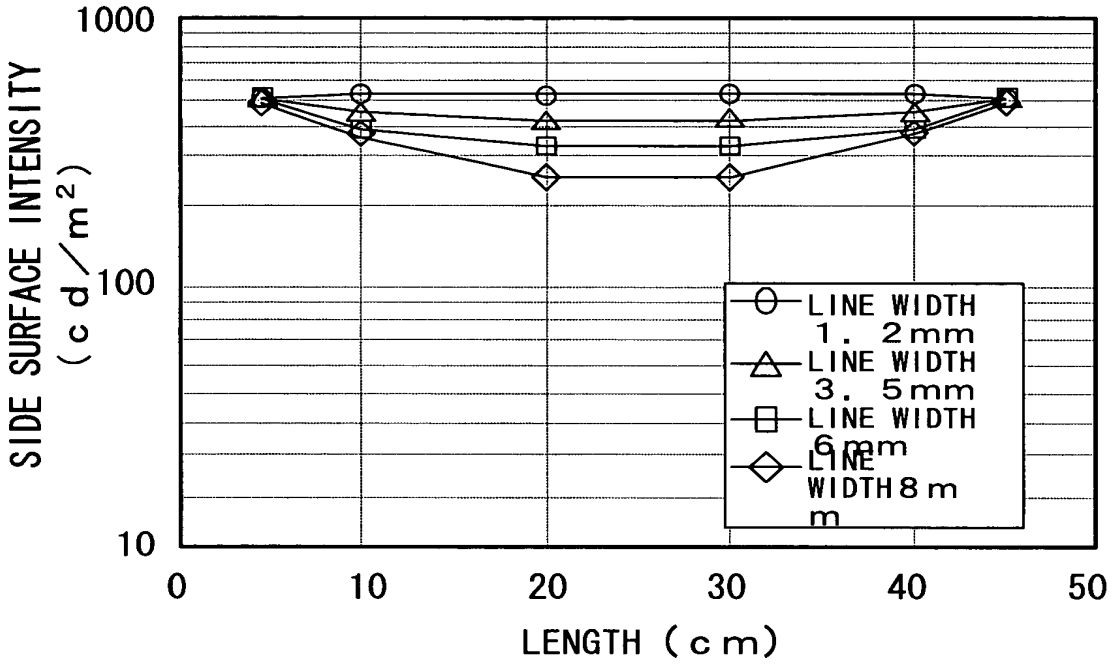

1000
100
10
SIDE SURFACE INTENSITY (cd/m²)
0
10
20
30
40
50
LENGTH (cm)
LINE WIDTH 1.2mm
LINE WIDTH 3.5mm
LINE WIDTH 6mm
LINE WIDTH 8mm

FIG. 31

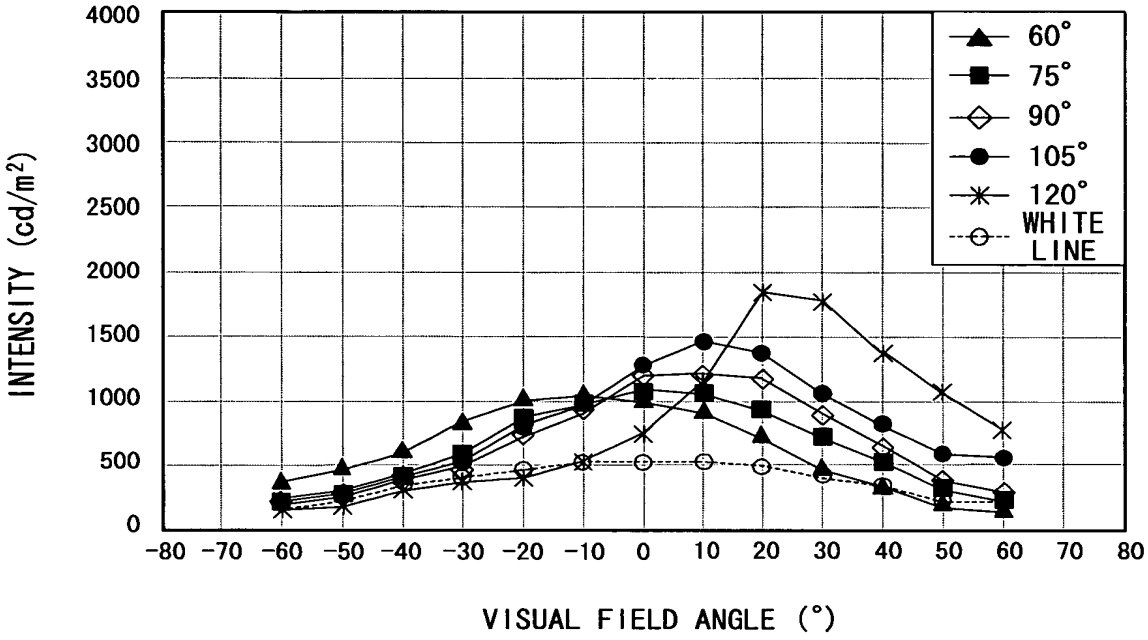

INTENSITY (cd/m²)
4000
3500
3000
2500
2000
1500
1000
500
0
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
VISUAL FIELD ANGLE (°)
60°
75°
90°
105°
120°
WHITE LINE

FIG. 32

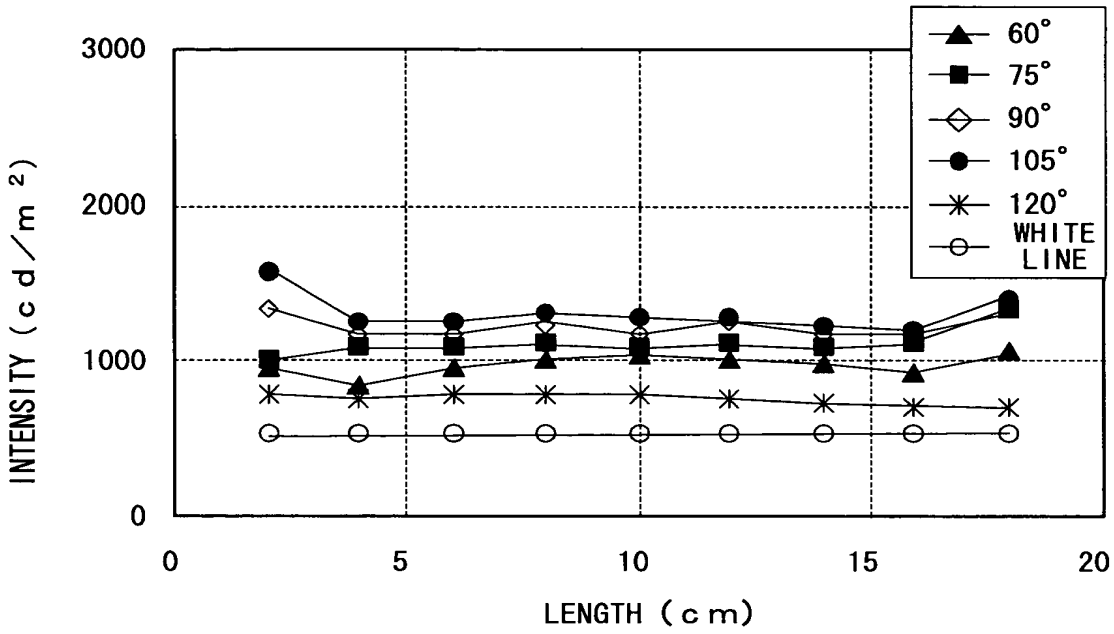

3000
2000
1000
0
INTENSITY (cd/m²)
0
5
10
15
20
LENGTH (cm)
60°
75°
90°
105°
120°
WHITE LINE

FIG. 33

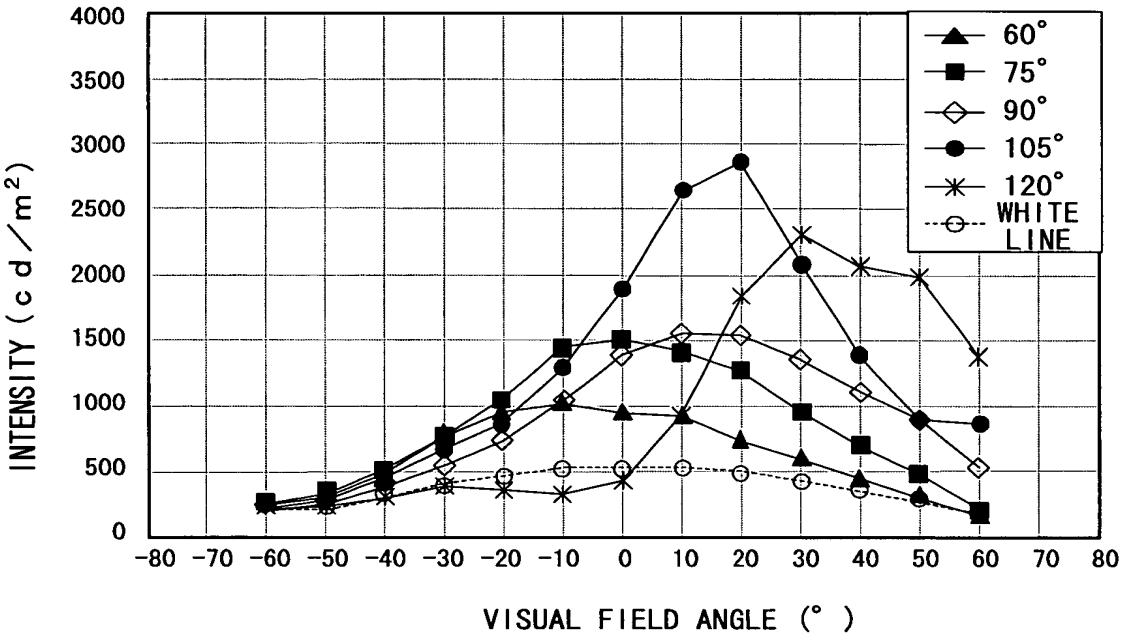

4000
3500
3000
2500
2000
1500
1000
500
0
INTENSITY (cd/m²)
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
VISUAL FIELD ANGLE (°)
60°
75°
90°
105°
120°
WHITE LINE

FIG. 34

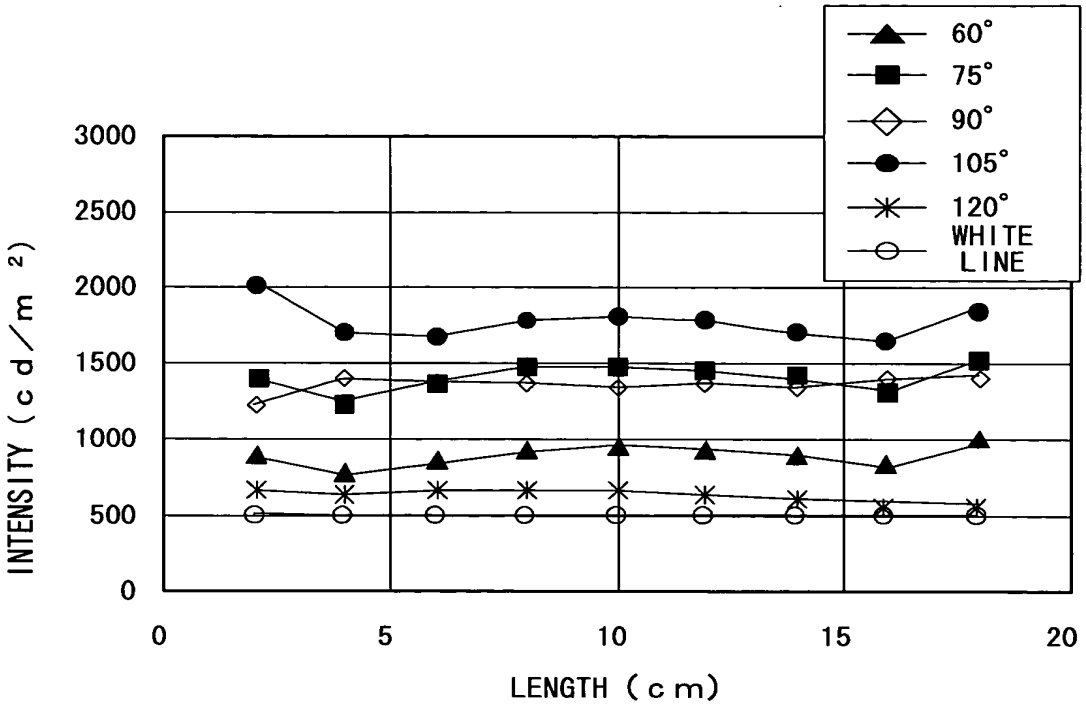

60°
75°
90°
105°
120°
WHITE LINE
INTENSITY (cd/m²)
3000
2500
2000
1500
1000
500
0
0
5
10
15
20
LENGTH (cm)

FIG. 35

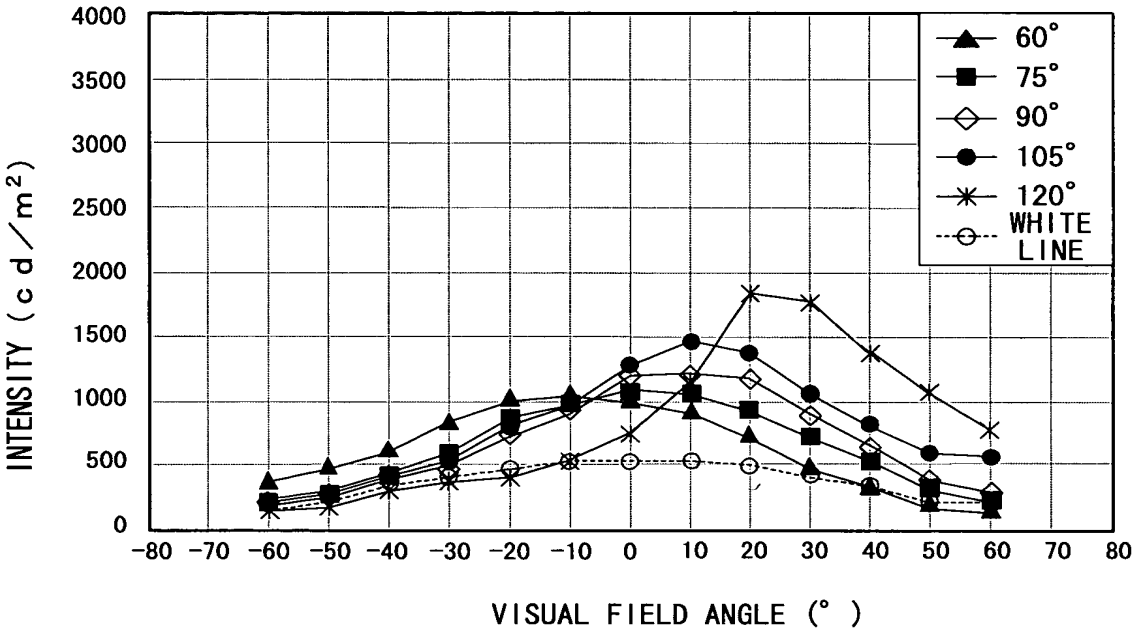

INTENSITY (cd/m²)
4000
3500
3000
2500
2000
1500
1000
500
0
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
VISUAL FIELD ANGLE (°)
60°
75°
90°
105°
120°
WHITE LINE

FIG. 36

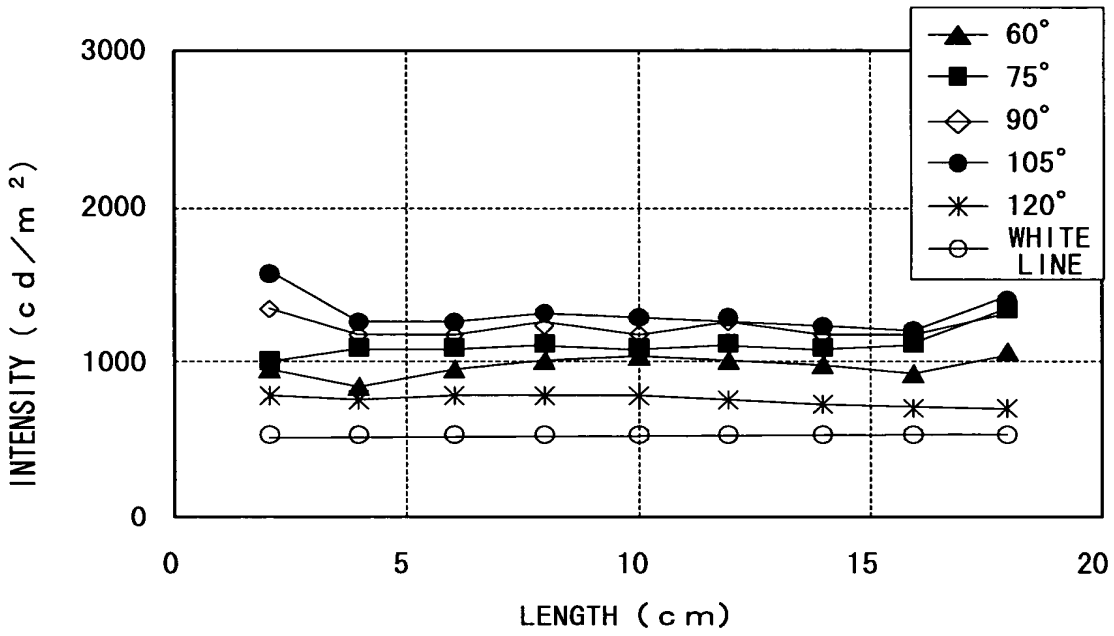

60°
75°
90°
105°
120°
WHITE LINE
INTENSITY (cd/m²)
3000
2000
1000
0
0
5
10
15
20
LENGTH (cm)

FIG. 37

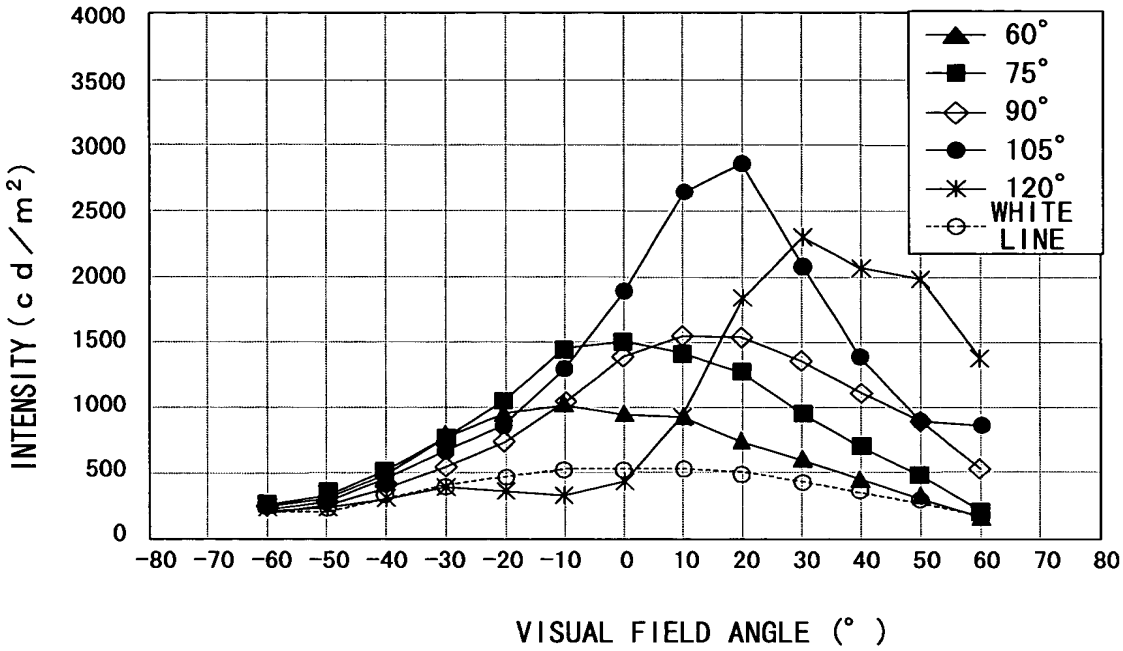

INTENSITY (cd/m²)
4000
3500
3000
2500
2000
1500
1000
500
0
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
VISUAL FIELD ANGLE (°)
60°
75°
90°
105°
120°
WHITE LINE

FIG. 38

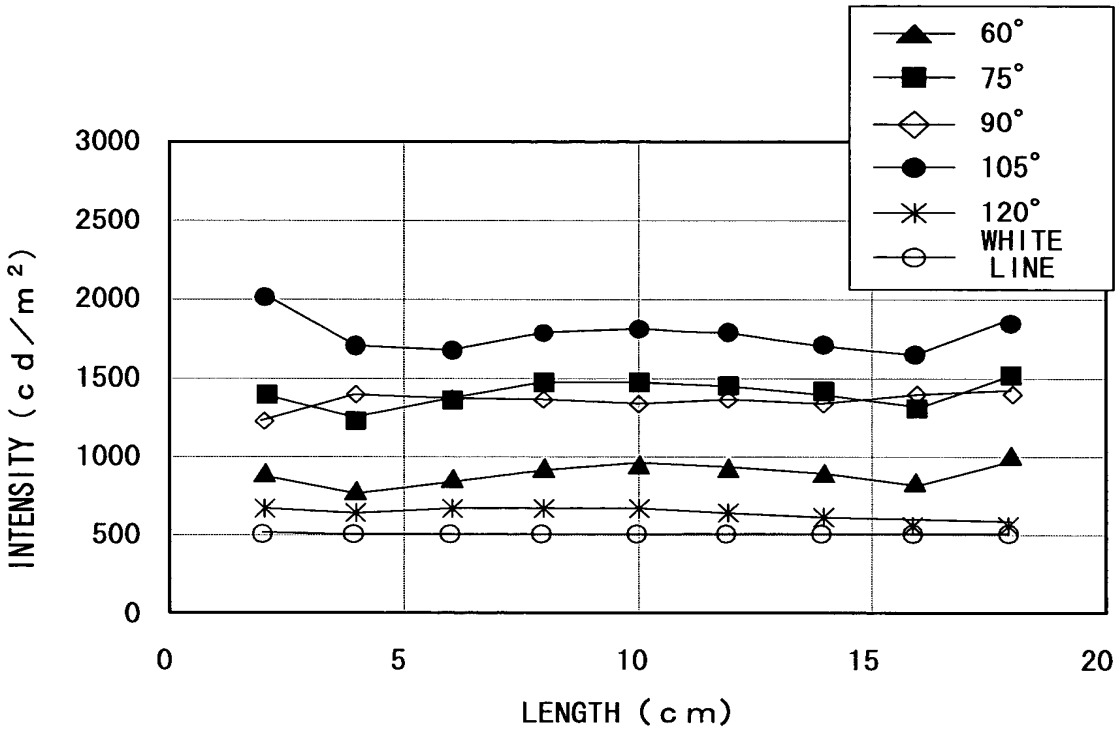

60°
75°
90°
105°
120°
WHITE LINE
INTENSITY (cd/m²)
3000
2500
2000
1500
1000
500
0
0
5
10
15
20
LENGTH (cm)

FIG. 39

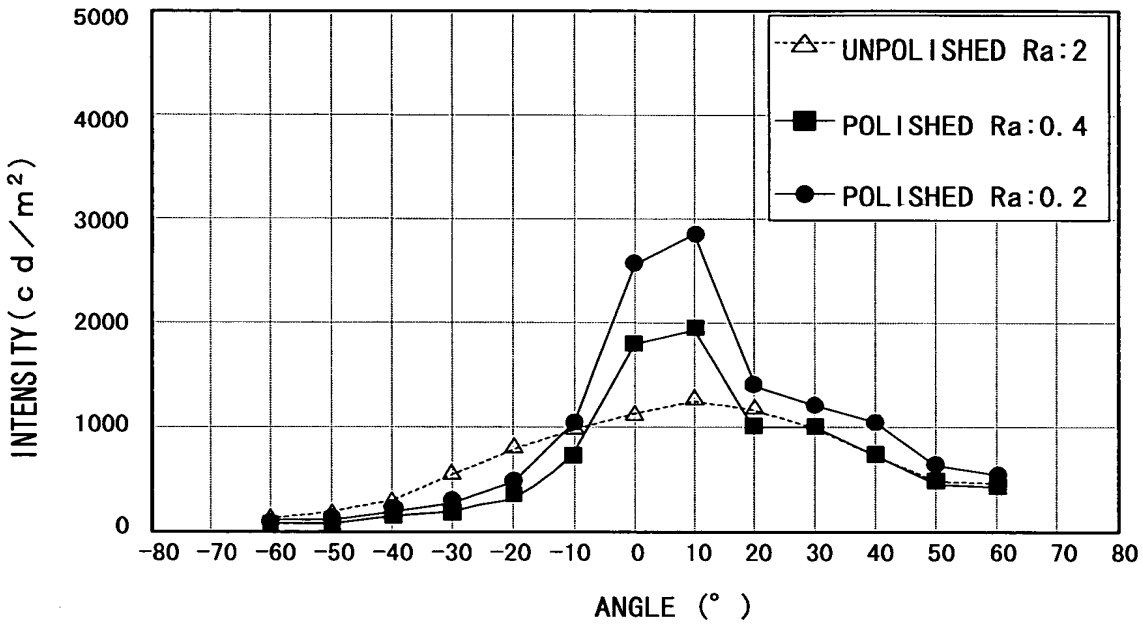

5000
4000
3000
2000
1000
0
INTENSITY(cd/m²)
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
ANGLE (°)
UNPOLISHED Ra:2
POLISHED Ra:0.4
POLISHED Ra:0.2

FIG. 40

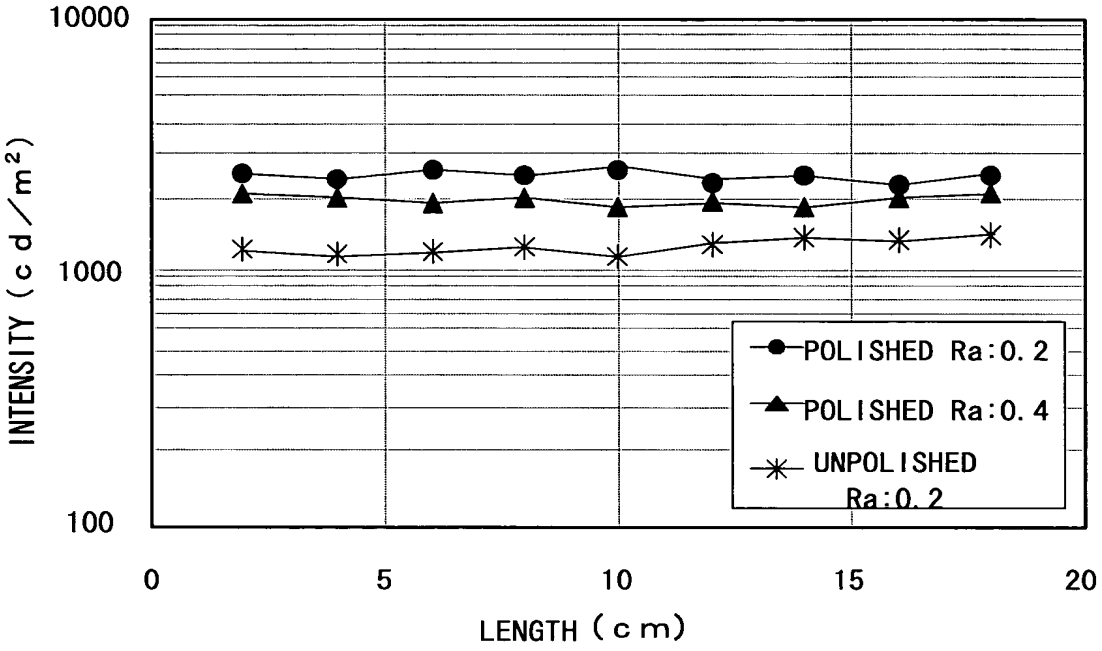

10000
1000
100
INTENSITY (cd/m²)
0
5
10
15
20
LENGTH (cm)
POLISHED Ra:0.2
POLISHED Ra:0.4
UNPOLISHED Ra:0.2

FIG. 41

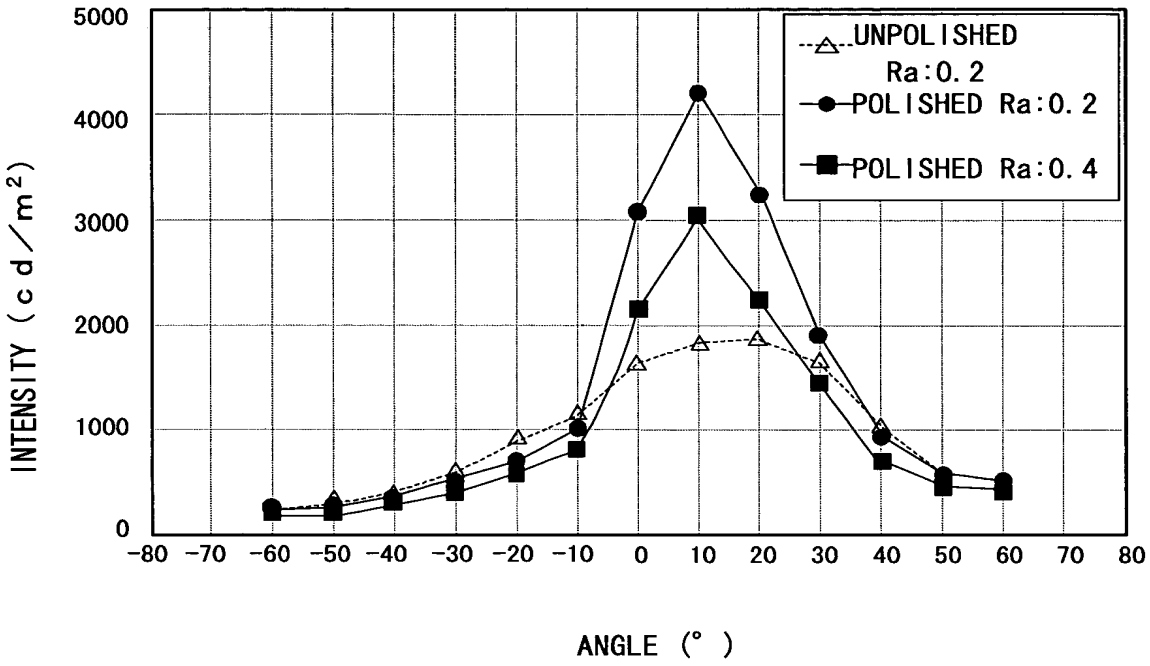

UNPOLISHED Ra:0.2
POLISHED Ra:0.2
POLISHED Ra:0.4
INTENSITY (cd/m²)
5000
4000
3000
2000
1000
0
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
ANGLE (°)

FIG. 42

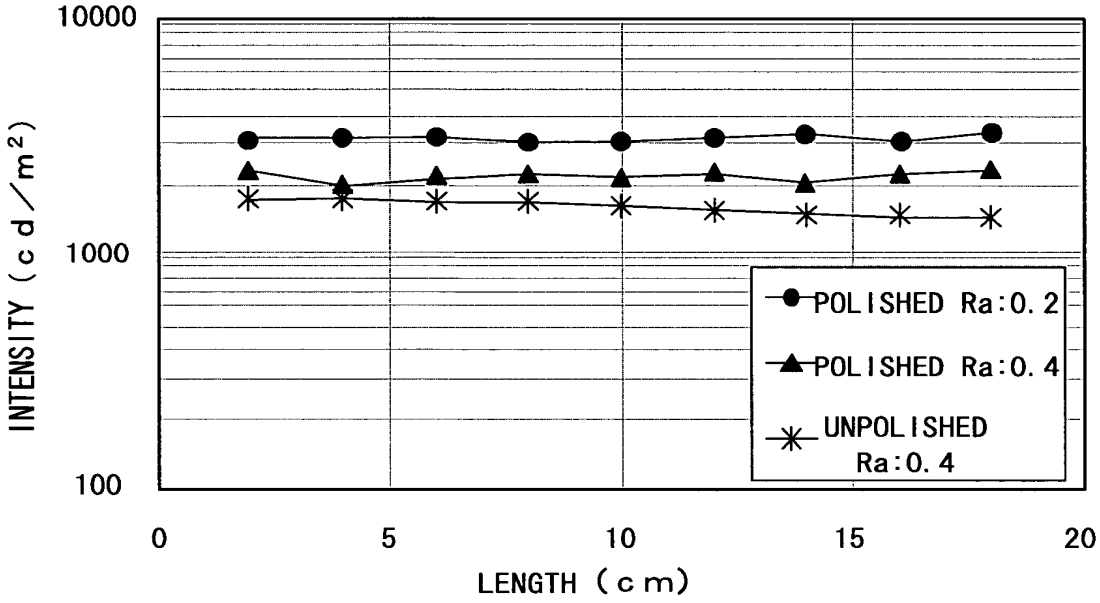

10000
1000
100
INTENSITY (cd/m²)
0
5
10
15
20
LENGTH (cm)
POLISHED Ra:0.2
POLISHED Ra:0.4
UNPOLISHED Ra:0.4

FIG. 43

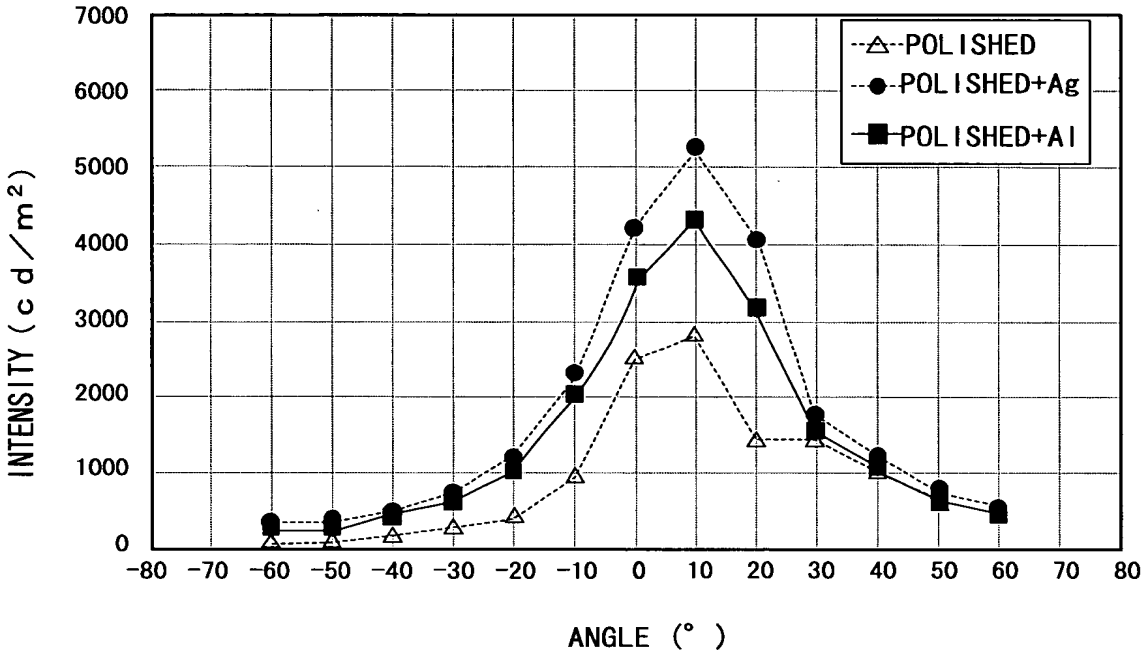

7000
6000
5000
4000
3000
2000
1000
0
INTENSITY (cd/m²)
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
ANGLE (°)
POLISHED
POLISHED+Ag
POLISHED+Al

FIG. 44

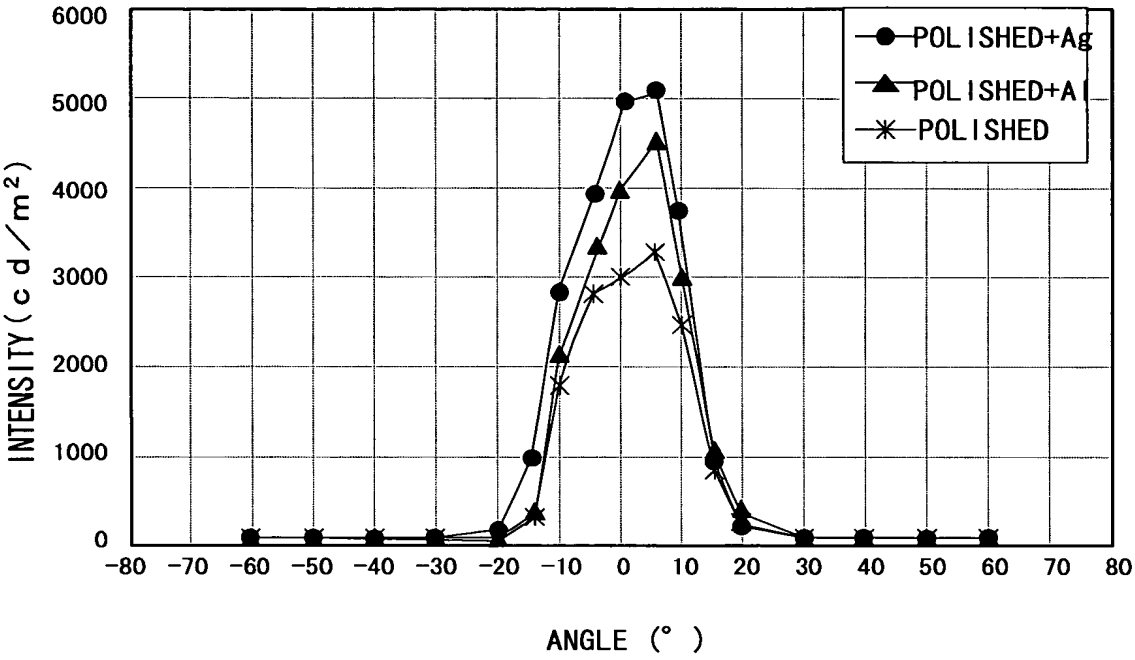

6000
5000
4000
3000
2000
1000
0
INTENSITY (cd/m²)
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
ANGLE (°)
POLISHED+Ag
POLISHED+Al
POLISHED

FIG. 45

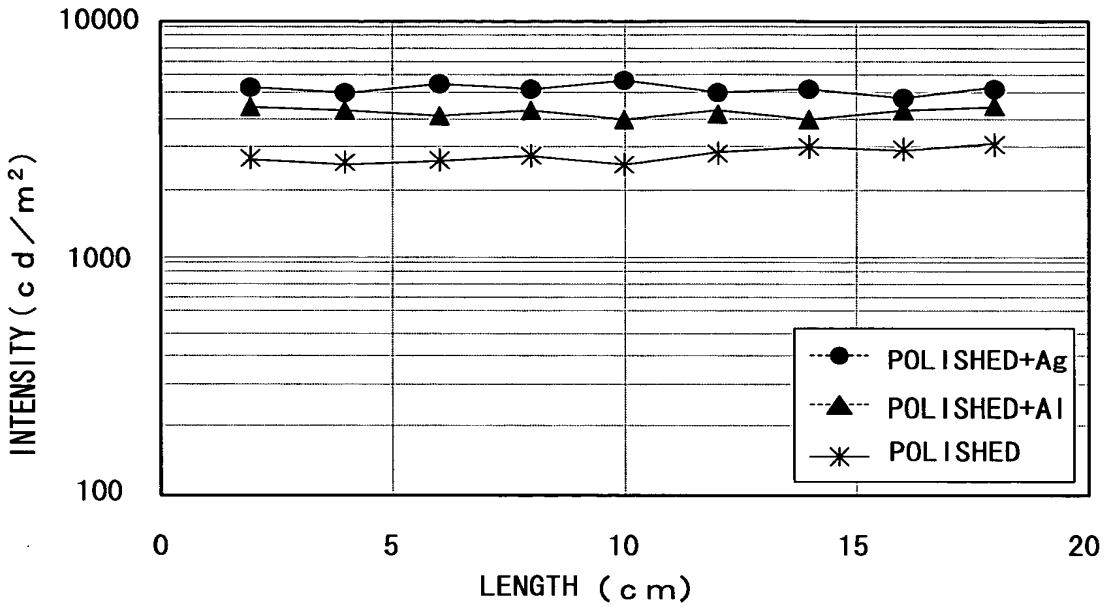

10000
1000
100
INTENSITY (cd/m²)
0
5
10
15
20
LENGTH (cm)
POLISHED+Ag
POLISHED+Al
POLISHED

FIG. 46

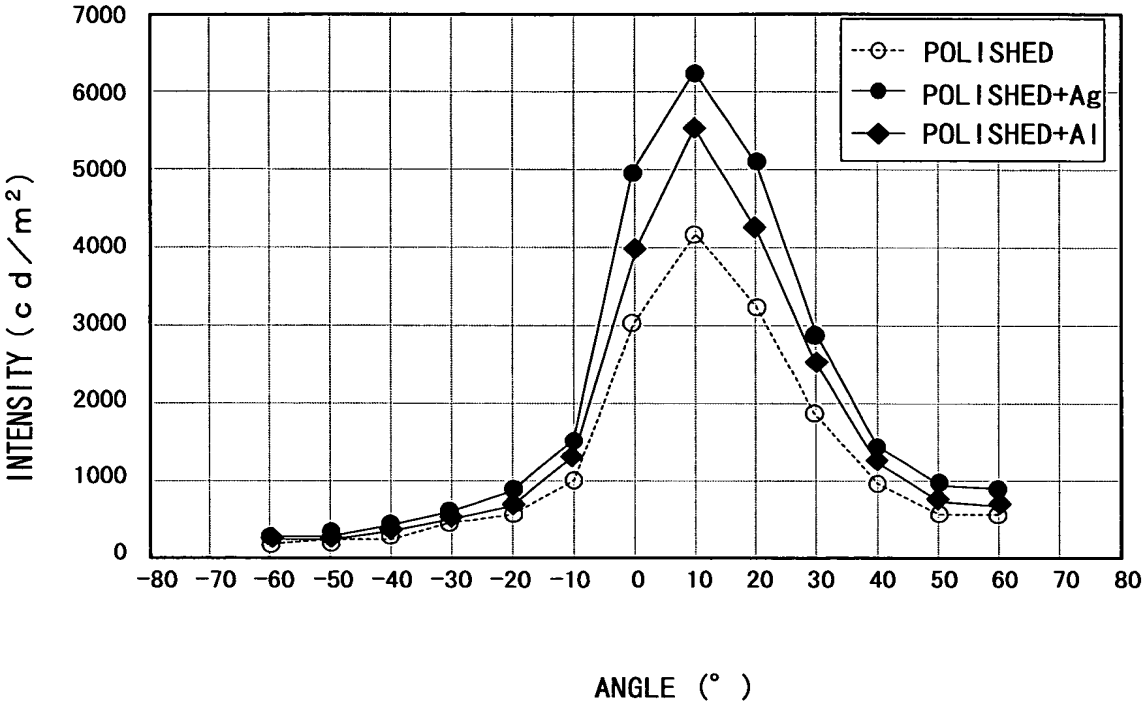

7000
6000
5000
4000
3000
2000
1000
0
INTENSITY (cd/m²)
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
ANGLE (°)
POLISHED
POLISHED+Ag
POLISHED+Al

FIG. 47

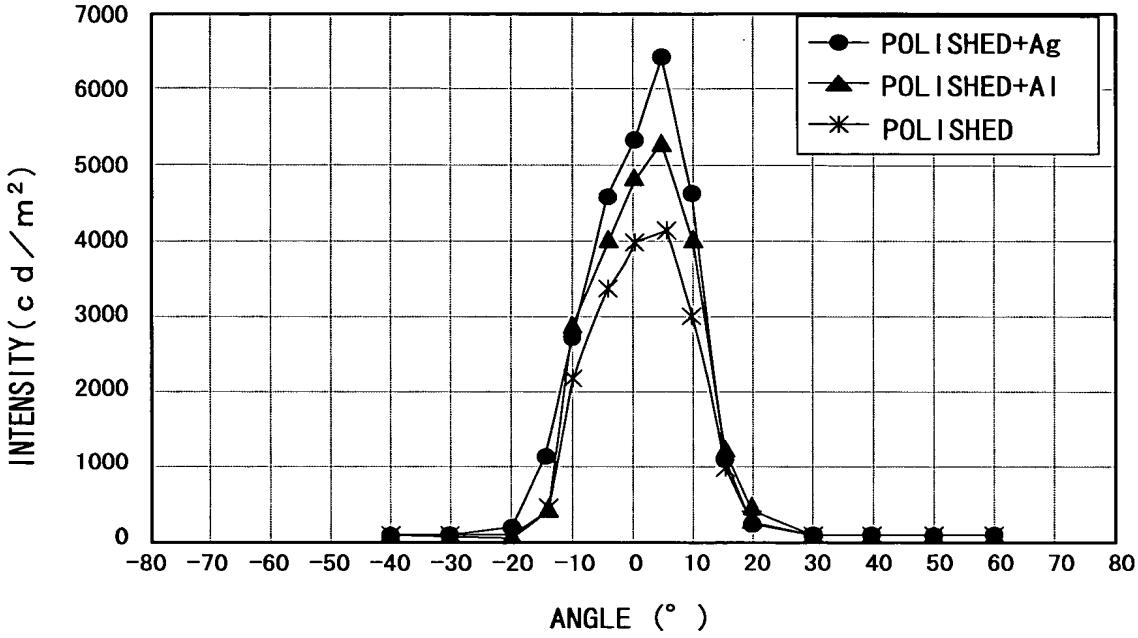
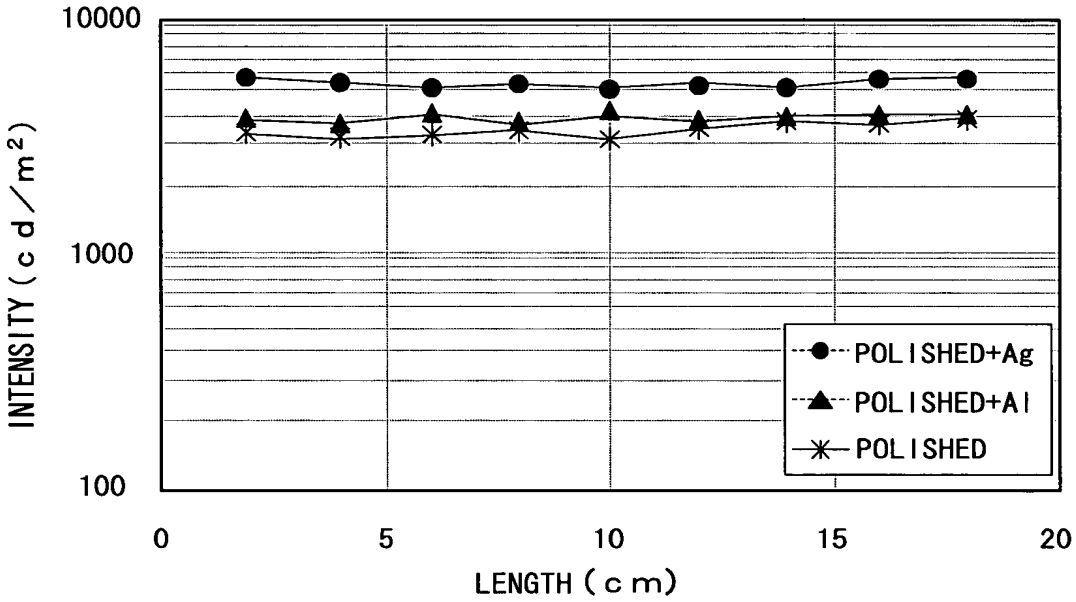

POLISHED+Ag
POLISHED+Al
POLISHED
INTENSITY(cd/m²)
7000
6000
5000
4000
3000
2000
1000
0
-80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80
ANGLE (°)

FIG. 48


10000
1000
100
INTENSITY (c d / m 2)
0
5
10
15
20
LENGTH (c m)
POLISHED+Ag
POLISHED+Al
POLISHED